

Mountain Valley Pipeline, LLC
v. Philip Ateto, et al.

EXHIBIT 3

To Complaint

United States Department of Interior, Bureau of Land Management
Right of Way Grant

ISSUING OFFICE
Eastern States Office
SERIAL NUMBER
VAES-058143-04

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT

1. A right-of-way is hereby granted pursuant to Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185).
2. Nature of Interest:

- a. By this instrument, the holder:

Mountain Valley Pipeline, LLC
2200 Energy Drive
Canonsburg, PA 15317

receives a right to construct, operate, maintain, and terminate a 42-inch, welded steel, underground natural gas pipeline and related facilities (as included in Attachment E, Plan of Development) on Federal land described as follows:

Virginia,
Giles County (6.69± acres),
Montgomery County (10.86± acres), and

West Virginia,
Monroe County (4.07± acres).

More particularly described in Attachment A, Legal Land Descriptions.

- b. The right-of-way area granted herein is 50 feet wide and approximately 3.58 miles long and contains 21.62 acres, more or less.
- c. This instrument shall terminate on December 31, 2052, approximately thirty (30) years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
- d. This instrument may be renewed. If renewed, the right-of-way shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.
- e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices. The rental provisions of this authorization may also be modified consistent with the provisions of any regulatory changes or pursuant to the provisions of any new or revised statutory authorities.

4. Terms and Conditions:

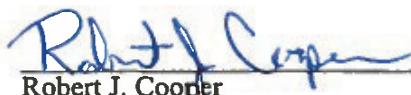
- a. This instrument is issued subject to the holder's compliance with all applicable laws and regulations contained in Title 43 Code of Federal Regulations (CFR) part 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 180 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued pursuant to the authority of paragraph (1)(a) for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A, B, C, D, E, and F, dated (see below), attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

continued from (4)(d)

Exhibit	Title	Date
A	Right-of-Way Grant, Legal Land Descriptions	May 8, 2023
B	Right-of-Way Grant, Maps	December 16, 2020
C	Right-of-Way Grant, Definitions of Terms	May 8, 2023
D	Right-of-Way Grant, Standard and Special Stipulations	May 9, 2023
E	Right-of-Way Grant, Plan of Development	May 2023
F	Right-of-Way Grant, Construction March Charts	April 6, 2023

RIGHT-OF-WAY GRANT
VAES-058143-04

IN WITNESS WHEREOF, the undersigned agrees to the terms and conditions of this right-of-way grant.



Robert J. Cooper
Mountain Valley Pipeline, LLC, by and through its
operator, EQM Gathering OPCO, LLC

June 8, 2023

Date



Mitchell Leverette
State Director
BLM Eastern States Office

June 20, 2023

Effective Date of Grant

VAES-058143-05

EXHIBIT A

Legal Land Description

U.S. Forest Service Tract No. 968, Area 1
Giles County, VA

A Temporary Workspace for the purposes of construction of a natural gas pipeline upon a tract of land described as U.S. Forest Service Tract No. 968. This tract was conveyed to the United States of America from Pocahontas Land Corporation by a deed dated July 8, 1968, found in the Clerk's Office of the Circuit Court of Giles County, Virginia in Deed Book 118, page 458. This tract is situated in the Eastern District, Giles County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this Temporary Workspace. This Temporary Workspace is more particularly described as follows:

Commencing at a corner of the U.S. Forest Service Tract No. 968 and a tract of land owned by Isaiah R. Snider, Jr., monumented with a 1-inch x 2-inch I-beam with a punch mark as shown in Exhibit B, sheet 2. From this corner, a 2-inch diameter aluminum pipe with a brass cap, a corner to Luther Silas or Freida C. Sanders and U.S. Forest Service Tract No. 968, bears South 64° 52' 18" West, a distance of 1033.43 feet, as shown in Exhibit B, sheet 2;

THENCE, South 64° 52' 18" West, a distance of 144.63 feet from the 2-inch diameter I-beam, on the line of Isaiah R. Snider Jr.'s tract and U.S. Forest Service Tract No. 968, to the center of the Pipeline and the POINT OF BEGINNING of the herein described tract;

THENCE, South 64° 52' 18" West, a distance of 25.01 feet to a point on the westerly side of the Pipeline right-of-way (shown on map as "Permanent Easement");

THENCE, continuing South 64° 52' 18" West, a distance of 62.52 feet to a point on the westerly side of a Temporary Workspace;

THENCE, North 23° 51' 20" West, leaving Isaiah R. Snider, Jr.'s tract and through U.S. Forest Service Tract No. 968, a distance of 228.75 ft. to a point;

THENCE, North 38° 30' 47" West, a distance of 122.47 feet to a point;

THENCE, North 51° 44' 46" West, a distance of 310.64 feet to a point;

THENCE, North 31° 46' 34" West, a distance of 315.84 feet to a point;

THENCE, North 08° 13' 48" West, a distance of 65.51 feet to a point on a line of the aforesaid Isaiah R. Snider Jr. tract, and U.S. Forest Service Tract No. 968; From this point, a 2-inch aluminum pipe with a cap marked 11-1130A-1983, a corner to U.S. Forest Service Tract No. 968 and U.S. Forest Service Tract 1130A and Isaiah R. Snider, bears North 47° 29' 12" West, a distance of 1910.82 feet as shown in Exhibit B, sheet 2;

THENCE, South 47° 29' 12" East, on the line of Isaiah R. Snider Jr. and U.S. Forest Service Tract No. 968, a distance of 134.17 feet to a point of the westerly side of the Pipeline right-of-way;

VACS-058143-05

THENCE, South 47° 29' 12" East, on the line of Isaiah R. Snider Jr. and U.S. Forest Service Tract No. 968, leaving the westerly side of and crossing the Pipeline, a distance of 92.33 feet, to a point in the center of the Pipeline;

THENCE, South 47° 29' 12" East, on the line of Isaiah R. Snider Jr. and U.S. Forest Service Tract No. 968, a distance of 92.33 feet, to a point on the easterly side of the Pipeline right-of-way;

THENCE, South 47° 29' 12" East, on the line of Isaiah R. Snider Jr. and U.S. Forest Service Tract No. 968, a distance of 46.16 feet, to a point on the easterly side of the Temporary Workspace;

THENCE, South 31° 46' 34" East, leaving Isaiah R. Snider Jr.'s tract and through U.S. Forest Service Tract No. 968, a distance of 2.53 feet;

THENCE, South 51° 44' 46" East, a distance of 9.23 feet, to a point on a line of the aforesaid Isaiah R. Snider Jr. tract and U.S. Forest Service Tract No. 968;

THENCE, South 47° 29' 12" East, on a line of the aforesaid Isaiah R. Snider Jr. tract and U.S. Forest Service Tract No. 968, a distance of 168.29 feet to a point on the easterly side of the Pipeline right-of-way;

THENCE, South 47° 29' 12" East, a distance of 182.91 feet, through and back to a point of the easterly side of the Pipeline;

THENCE, South 47° 29' 12" East, on a line of the aforesaid Isaiah R. Snider Jr. tract and U.S. Forest Service Tract No. 968, a distance of 80.14 feet to a point;

THENCE, South 38° 30' 47" East, leaving the aforesaid Isaiah R. Snider Jr. tract and through U.S. Forest Service Tract No. 968, a distance of 13.09 feet to a point;

THENCE, South 23° 51' 20" East, a distance of 242.05 feet to a point on a line of the aforesaid Isaiah R. Snider Jr. tract and U.S. Forest Service Tract No. 968;

THENCE, South 64° 52' 18" West, a distance of 12.52 feet, to a point on east boundary of the Pipeline right-of-way;

THENCE, South 64° 52' 18" West, a distance of 25.03 feet to the POINT OF BEGINNING; containing 2.47 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 968, Area 2
Giles County, VA

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land described as U.S. Forest Service Tract No. 968. This tract was conveyed to the United States of America from Pocahontas Land Corporation by a deed dated July 8, 1968, found in the Clerk's Office of the Circuit Court of Giles County, Virginia in Deed Book 118, page 458. This tract is situated in the Eastern District, Giles County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this additional Temporary Workspace. The Temporary Workspace is more particularly described as follows:

COMMENCING at a corner of the U.S. Forest Service Tract No. 968 and a tract of land owned by Isaiah R. Snider, Jr., monumented with a 2-inch aluminum pipe with brass cap stamped 11-1130A-1983, as shown in Exhibit B, sheet 2;

THENCE, South 47° 29' 12" East, a distance of 33.50 feet to a point on the line of Isaiah R. Snider Jr.'s tract and U.S. Forest Service Tract No. 968, and **POINT OF BEGINNING** of a Temporary Workspace;

THENCE, South 47° 29' 12" East, on the line of Isaiah R. Snider, Jr.'s tract and U.S. Forest Service Tract No. 968, a distance of 482.96 feet to a point;

THENCE, North 71° 59' 24" West, leaving said line of line Isaiah R. Snider, Jr.'s tract and through and U.S. Forest Service Tract No. 968, a distance of 81.54 feet to a point;

THENCE, North 37° 35' 40" West, a distance of 100.79 feet to a point;

THENCE, North 54° 37' 41" West, a distance of 286.36 feet to a point;

THENCE, North 16° 35' 04" East, a distance of 57.94 feet to a point, **to the POINT OF BEGINNING**, containing 0.33 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 968
Giles County, VA

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land described as U.S. Forest Service Tract No. 968. This tract was conveyed to the United States of America from Pocahontas Land Corporation by a deed dated July 8, 1968, found in the Clerk's Office of the Circuit Court of Giles County, Virginia in Deed Book 118, page 458. This tract is situated in the Eastern District, Giles County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this additional Temporary Workspace. This additional Temporary Workspace is more particularly described as follows:

BEGINNING at a corner of the U.S. Forest Service Tract No. 968 and a tract of land owned by Isaiah R. Snider, Jr., monumented with a 1-inch x 2-inch I-beam with a punch mark as shown in Exhibit B, sheet 2. From this corner, a 2-inch diameter aluminum pipe with a brass cap, a corner to Luther Silas or Freida C. Sanders and U.S. Forest Service Tract No. 968, bears South 64° 52' 18" West, a distance of 1033.43 feet, as shown in Exhibit B, sheet 2;

THENCE, South 64° 52' 18" West, a distance of 107.12 feet from the 2-inch diameter I-beam, on the line of Isaiah R. Snider Jr.'s tract and U.S. Forest Service Tract No. 968, to a point on the westerly side of said Temporary Workspace;

THENCE, North 23° 51' 20" West, leaving Isaiah R. Snider, Jr.'s tract and through U.S. Forest Service Tract No. 968, a distance of 30.48 feet to a point;

THENCE, North 39° 54' 15" East, a distance of 86.94 feet to a point on a line of the aforesaid Isaiah R. Snider Jr. tract and U.S. Forest Service Tract No. 968;

THENCE, South 47° 29' 12" East, along the line Isaiah R. Snider, Jr.'s tract and U.S. Forest Service Tract No. 968, a distance of 72.63 feet to the **POINT OF BEGINNING**, containing 0.11 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

**U.S. Forest Service Tract No. 1130A
Giles County, VA**

A Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land described as U.S. Forest Service Tract No. 1130A. This tract was conveyed to the United States of America from National Gypsum Company by a deed dated December 28, 1984, found in the Clerk's Office of the Circuit Court of Giles County, Virginia in Deed Book 187, page 528. This tract is situated in the Eastern District, Giles County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this Temporary Workspace. The Temporary Workspace is more particularly described as follows:

Commencing at a corner of U.S. Forest Service Tract No. 1130A and a tract of land owned by Isaiah R. Snider, Jr., monumented with a 2-inch diameter aluminum pipe with a brass cap marked 11-1130A-1983, as shown in Exhibit B, sheet 2. From this corner, a 2-inch diameter aluminum pipe with a brass cap marked, 10-1130A-1983, a corner to U.S. Forest Service Tract No. 1130A, U.S. Forest Service Tract No. 1130A and a tract of land owned by Isaiah R. Snider, Jr., bears North 56° 57' 38" East, a distance of 368.20 feet, as shown in Exhibit B, sheet 2;

THENCE, North 56° 57' 38" East, a distance of 46.51 feet, from the 2-inch diameter aluminum pipe, with brass cap marked 10-1130A-1983, on the line of Isaiah R. Snider Jr.'s tract and U.S. Forest Service Tract No. 1130A, to a point on the westerly side of the Temporary Workspace and the POINT OF BEGINNING of the herein described tract;

THENCE, North 16° 35' 04" East, leaving Isaiah R. Snider, Jr.'s land and through to U.S. Forest Service Tract No. 1130A, a distance of 177.35 feet to a point;

THENCE, North 49° 08' 31" East, a distance of 464.61 feet to a point;

THENCE, North 78° 58' 15" East, a distance 70.75 feet to a point;

THENCE, North 34° 00' 16" East, a distance of 85.20 feet to a point;

THENCE, North 24° 55' 56" East, a distance of 258.10 feet to a point;

THENCE, North 52° 02' 39" East, a distance of 66.21 feet to a point;

THENCE, North 32° 42' 44" East, a distance of 151.04 feet to a point;

THENCE, North 38° 50' 21" East, a distance of 28.93 feet to a point;

THENCE, North 46° 38' 41" East, a distance of 153.18 feet to a point;

THENCE, North 36° 28' 02" East, a distance of 50.96 feet to a point;

THENCE, North 07° 19' 38" West, a distance of 149.02 feet to a point;

THENCE, North 53° 06' 24" East, a distance of 130.85 feet to a point;

VAES-058143-05

THENCE, North 75° 24' 34" East, a distance of 38.53 feet to a point;

THENCE, North 04° 38' 06" West, a distance of 11.98 feet to a point;

THENCE, North 06° 57' 40" East, a distance of 74.67 feet to a point;

THENCE, North 05° 59' 58" West, a distance of 170.04 feet to a point;

THENCE, North 02° 27' 12" East, a distance of 177 .51 feet to a point;

THENCE, North 13° 13' 28" East, a distance of 65.34 feet to a point;

THENCE, North 44° 32' 03" West, a distance of 28.75 feet to a point;

THENCE, North 59° 56' 15" West, a distance of 39.28 feet to a point;

THENCE, North 55° 22' 03" West, a distance of 71.67 feet to a point;

THENCE, North 38° 38' 51" West, a distance of 68.62 feet to a point;

THENCE, North 41° 39' 27" West, a distance of 41.04 feet to a point;

THENCE, North 46° 59' 43" West, a distance of 93.73 feet to a point;

THENCE, North 33° 07' 28" West, a distance of 91.70 feet to a point;

THENCE, North 26° 25' 18" West, a distance of 65.99 feet to a point;

THENCE, North 30° 24' 14" West, a distance of 41.51 feet to a point;

THENCE, North 26° 15' 07" West, a distance of 130.02 feet to a point;

THENCE, North 34° 43' 29" West, a distance of 42.38 feet to a point;

THENCE, North 24° 14' 16" West, a distance of 56.20 feet to a point;

THENCE, North 10° 13' 58" West, a distance of 73.47 feet to a point;

THENCE, North 14° 09' 02" East, a distance of 60.60 feet to a point;

THENCE, North 10° 27' 40" East, a distance of 56.13 feet to a point;

THENCE, North 13° 23' 47" East, a distance of 57.98 feet to a point;

THENCE, North 16° 18' 45" East, a distance of 43.73 feet to a point,

THENCE, North 19° 17' 47" East, a distance of 48.13 feet to a point;

THENCE, North 21° 27' 16" East, a distance of 57.71 feet to a point;

VAES-058143-05

THENCE, North 15° 33' 33" East, a distance of 44.59 feet to a point;
THENCE, North 19° 00' 40" East, a distance of 81.24 feet to a point;
THENCE, North 21° 27' 07" East, a distance of 86.50 feet to a point;
THENCE, North 31° 22' 03" East, a distance of 43.20 feet to a point;
THENCE, North 31° 22' 03" East, a distance of 34.47 feet to a point;
THENCE, North 27° 53' 12" East, a distance of 23.38 feet to a point;
THENCE, South 62° 06' 48" East, a distance of 49.17 feet to a point;
THENCE, North 31° 15' 24" East, a distance of 57.80 feet to a point;
THENCE, North 24° 54' 55" East, a distance of 76.56 feet to a point;
THENCE, North 40° 43' 11" East, a distance of 17.65 feet to a point;
THENCE, North 21° 39' 53" West, a distance of 71.34 feet to a point,
THENCE, North 32° 18' 36" West, a distance of 67.30 feet to a point;
THENCE, North 20° 55' 47" West, a distance of 140.46 feet to a point;
THENCE, North 80° 51' 53" West, a distance of 215.16 feet to a point;
THENCE, North 09° 03' 26" West, a distance of 217.51 feet to a point;
THENCE, North 41° 16' 12" West, a distance of 31.53 feet to a point;
THENCE, North 51° 24' 52" West, a distance of 26.95 feet to a point;
THENCE, North 66° 58' 01" West, a distance of 98.14 feet to a point;
THENCE, North 43° 52' 35" West, a distance of 89.10 feet to a point;
THENCE, North 36° 22' 27" West, a distance of 33.45 feet to a point;
THENCE, North 22° 43' 48" West, a distance of 118.38 feet to a point;
THENCE, North 08° 11' 28" West, a distance of 45.19 feet to a point;
THENCE, North 23° 15' 24" West, a distance of 11.54 feet to a point;
THENCE, North 64° 37' 26" West, a distance of 27.37 feet to a point;

VAES-058143-05

THENCE, North 72° 58' 44" West, a distance of 93.66 feet to a point on a line of the U.S. Forest Service's Tract No. 1169A and 1130A, being also the northwesterly corner of the Temporary Workspace, as shown in Exhibit B, sheet 3;

THENCE, North 47° 00' 35" East, along the line of said U.S. Forest Service Tract No. 1169A and 1130A, a distance of 71.78 feet to a point on the westerly side of the Pipeline right-of-way;

THENCE, North 47° 00' 35" East, continuing along said line of U.S. Forest Service Tract No. 1169A and 1130A, a distance of 28.95 feet to a point in the center of the Pipeline right-of-way;

THENCE, North 47° 00' 35" East, continuing along said line of U.S. Forest Service Tract No. 1169A and 1130A, a distance of 28.95 feet to a point on the easterly side of the Pipeline right-of-way;

THENCE, North 47° 00' 35" East, continuing along said line of U.S. Forest Service Tract No. 1169A and 1130A, a distance of 14.64 feet to a point;

THENCE, South 72° 58' 44" East, leaving U.S. Forest Service Tract No. 1169A and through U.S. Forest Service Tract No. 1130A, a distance of 30.66 feet to a point;

THENCE, South 64° 37' 26" East, a distance of 83.69 feet to a point;

THENCE, South 23° 15' 24" East, a distance of 75.26 feet to a point;

THENCE, South 08° 11' 28" East, a distance of 45.78 feet to a point;

THENCE, South 22° 43' 48" East, a distance of 87.48 feet to a point;

THENCE, South 36° 22' 27" East, a distance of 10.30 feet to a point;

THENCE, South 43° 52' 35" East, a distance of 55.37 feet to a point;

THENCE, South 66° 58' 01" East, a distance of 89.68 feet to a point;

THENCE, South 51° 24' 52" East, a distance of 54.95 feet to a point;

THENCE, South 41° 25" 11" East, a distance of 47.13 feet to a point;

THENCE, South 36° 17' 45" East, a distance of 36.80 feet to a point;

THENCE, South 09° 03' 26" East, a distance of 157.30 feet to a point;

THENCE, South 80° 51' 53" East, a distance of 175.42 feet to a point;

THENCE, South 45° 26' 49" East, a distance of 25.03 feet to a point;

THENCE, South 30° 05' 18" East, a distance of 51.44 feet to a point;

THENCE, South 21° 13' 47" East, a distance of 105.76 feet to a point;

VAES-058143-05

THENCE, South 20° 03' 14" East, a distance of 32.39 feet to a point;
THENCE, South 32° 18' 36" East, a distance of 65.53 feet to a point;
THENCE, South 21° 39' 53" East, a distance of 84.32 feet to a point;
THENCE, South 17°44' 51" West, a distance of 37.77 feet to a point;
THENCE, South 17° 44' 51" West, a distance of 2.92 feet to a point;
THENCE, South 40° 43' 11" West, a distance of 79.92 feet to a point;
THENCE, South 24° 54' 55" West, a distance of 70.30 feet to a point;
THENCE, South 31° 15' 24" West, a distance of 45.63 feet to a point;
THENCE, South 27° 53' 12" West, a distance of 39.06 feet to a point;
THENCE, South 31° 22' 03" West, a distance of 70.62 feet to a point;
THENCE, South 21° 27' 07" West, a distance of 40.16 feet to a point;
THENCE, South 21° 27' 07" West, a distance of 32.83 feet to a point;
THENCE, South 19° 00' 40" West, a distance of 74.81 feet to a point;
THENCE, South 15° 33' 33" West, a distance of 47.26 feet to a point,
THENCE, South 21° 27' 16" West, a distance of 61.79 feet to a point;
THENCE, South 19° 17' 47" West, a distance of 42.52 feet to a point;
THENCE, South 16° 18' 45" West, a distance of 37.29 feet to a point;
THENCE, South 13° 23' 47" West, a distance of 51.59 feet to a point;
THENCE, South 10° 27' 40" West, a distance of 56.95 feet to a point;
THENCE, South 14° 09' 02" West, a distance of 37.62 feet to a point;
THENCE, South 10° 13' 58" East, a distance of 31.11 feet to a point;
THENCE, South 24° 14' 16" East, a distance of 29.38 feet to a point;
THENCE, South 34° 43' 29" East, a distance of 40.82 feet to a point;
THENCE, South 25° 39' 19" East, a distance of 66.36 feet to a point;
THENCE, South 26° 43' 35" East, a distance of 67.24 feet to a point;

VAES-058143-05

THENCE, South 30° 24' 14" East, a distance of 41.84 feet to a point;

THENCE, South 26° 25' 18" East, a distance of 63.02 feet to a point;

THENCE, South 33° 07' 28 " East, a distance of 69.18 feet to a point;

THENCE, South 46° 59' 43" East, a distance of 84.36 feet to a point;

THENCE, South 41° 39' 27" East, a distance of 50.15 feet to a point;

THENCE, South 38° 38' 51" East, a distance of 53.53 feet to a point;

THENCE, South 55° 22' 03" East, a distance of 48.32 feet to a point;

THENCE, South 59° 56' 15" East, a distance of 51.20 feet to a point;

THENCE, South 44° 32' 03" East, a distance of 36.74 feet to a point;

THENCE, South 55° 17' 35" East, a distance of 39.44 feet to a point;

THENCE, South 34° 06' 52" East, a distance of 39.64 feet to a point;

THENCE, South 13° 13' 28" West, a distance of 122.73 feet to a point;

THENCE, South 02° 27' 12" West, a distance of 155.64 feet to a point;

THENCE, South 06° 46' 05" East, a distance of 85.16 feet to a point;

THENCE, South 05° 03' 47" East, a distance of 91.70 feet to a point;

THENCE, South 06° 57' 40" West, a distance of 75.14 feet to a point;

THENCE, South 04° 38' 06" East, a distance of 57.67 feet to a point;

THENCE, South 27° 45' 28" West, a distance of 62.09 feet to a point;

THENCE, South 75° 24' 34" West, a distance of 85.09 feet to a point;

THENCE, South 53° 06' 24" West, a distance of 33.41 feet to a point;

THENCE, South 07° 19' 38" East, a distance of 51.40 feet to a point on a line of a tract of land owned by Ray H. Snider, from which a chestnut oak 14" inches diameter, marked with 3 hacks, a corner to Ray H. Snider and U. S Forest Service Tract No. 1130A, bears North 35° 15' 22" East, a distance of 45.08 feet, as shown in Exhibit B, Sheet 3;

THENCE, South 35° 15' 22" West, along the line of Ray H. Snider tract and U.S. Forest Service Tract No. 1130A, a distance of 27.30 feet to a point easterly side of the Pipeline right-of-way;

VAES-058143-05

THENCE, South 35° 15' 22" West, continuing along said line, a distance of 39.82 feet to a point in the center of the Pipeline right-of-way;

THENCE, South 35° 15' 22" West, continuing along said line, a distance of 296.45 feet to a point on the easterly side of the Pipeline right-of-way;

THENCE, South 35° 15' 22" West, continuing along said line and leaving proposed a distance 43.14 feet to a point, from which a white oak, 13 inches in diameter, marked with 3 hacks, a corner to Ray H. Snider and U.S. Forest Service Tract No. 1130A, bears South 35° 15' 22" West, a distance of 189.23 feet, as shown in Exhibit B, Sheet 3;

THENCE, South 52° 02' 39" West, leaving Ray H. Snider's Tract and through U.S. Forest Service Tract No. 1130A, a distance of 151.54 feet to a point;

THENCE, South 24° 55' 56" West, a distance of 245.97 feet to a point;

THENCE, South 34° 00' 16" West, a distance of 157.82 feet to a point;

THENCE, South 49° 08' 31" West, a distance of 415.41 feet, to the southeasterly corner of Temporary Workspace at a point on a line of Isaiah R. Snider's Jr.'s tract and U.S. Forest Service Tract No. 1130A;

THENCE, South 56° 57' 38" West, along said line, a distance of 43.64 feet to a point on the easterly side of the Pipeline right-of-way;

THENCE, South 56° 57' 38" West, a distance of 38.59 feet to a point in center of the Pipeline right-of-way;

THENCE, South 56° 57' 38" West, a distance of 38.59 feet to a point on westerly side of Pipeline right-of-way;

THENCE, South 56° 57' 38" West, a distance of 96.48 feet to the Point of Beginning, containing 13.88 acres, which includes the total pipeline construction disturbance area.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 1169A
Giles County, VA

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 1169A, located in Eastern District, Giles County, Virginia. This tract was conveyed to the United States of America from American Resources, Inc. by a deed dated December 5, 1983, found in the Clerk's Office of Giles County, Virginia, in Deed Book 182, page 717. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this Temporary Workspace. The additional Temporary Workspace is more particularly described as follows:

COMMENCING at a point at the center of the Pipeline right-of-way on the northerly line of U.S. Forest Service Tract No. 1130A and the southerly line of this Temporary Workspace, not monumented, as shown in Exhibit B, sheet 3;

THENCE, South 47° 00' 35" West, a distance of 100.73 feet on the line of U.S. Forest Service Tract Nos. 1130A and 1169A, to the southwesterly corner of the Temporary Workspace and the **POINT OF BEGINNING** of the herein described tract;

THENCE, North 73° 26' 01" West, leaving U.S. Forest Service Tract No. 1130A and through U.S. Forest Service Tract No. 1169A, along the westerly side of the Temporary Workspace, a distance of 204.91 feet to a point;

THENCE, North 55° 37' 58" West, a distance of 54.23 feet to a point;

THENCE, North 34° 22' 02" East, a distance of 25.00 feet to a point;

THENCE, North 55° 37' 58" West, a distance of 63.31 feet to a point;

THENCE, North 45° 24' 06" West, a distance of 69.91 feet to a point;

THENCE, South 44° 35' 54" West, a distance of 25.00 feet to a point;

THENCE, North 45° 24' 06" West, a distance of 31.06 feet to a point;

THENCE, North 25° 37' 38" West, a distance of 134.63 feet to a point;

THENCE, North 05° 18' 21" West, a distance of 48.26 feet to a point;

THENCE, North 84° 41' 39" East, a distance of 25.00 feet to a point;

THENCE, North 05° 18' 21" West, a distance of 51.53 feet to a point;

THENCE, North 83° 31' 07" West, a distance of 20.43 feet to a point;

THENCE, North 42° 12' 25" West, a distance of 70.02 feet to a point;

THENCE, North 28° 24' 25" West, a distance of 102.97 feet to a point;

VAES-058143-05

THENCE, South 59° 32' 05" West, a distance of 25.02 feet to a point;

THENCE, North 28° 24' 25" West, a distance of 14.22 feet to a point;

THENCE, North 34° 45' 17" West, a distance of 209.26 feet to a point;

THENCE, South 71° 29' 27" West, a distance of 7.32 feet to a point;

THENCE, North 18° 30' 33" West, a distance of 50.00 feet to a point;

THENCE, South 71° 29' 27" West, a distance of 129.55 feet to a point;

THENCE, South 18° 30' 33" East, a distance of 50.00 feet to a point;

THENCE, South 71° 29' 27" West, a distance of 29.38 feet to a point;

THENCE, South 58° 34' 10" West, a distance of 218.55 feet to a point;

THENCE, North 57° 17' 38" West, a distance of 325.06 feet to a point;

THENCE, North 41° 24' 07" West, a distance of 186.68 feet to a point;

THENCE, North 03° 21' 15" East, a distance of 18.46 feet to a point;

THENCE, North 40° 09' 41" West, a distance of 36.46 feet to a point;

THENCE, North 52° 58' 19" West, a distance of 59.18 feet to a point;

THENCE, North 25° 27' 43" West, a distance of 71.94 feet to a point;

THENCE, North 21° 29' 15" West, a distance of 118.27 feet to a point;

THENCE, North 16° 39' 27" West, a distance of 50.13 feet to a point;

THENCE, North 86° 39' 52" West, a distance of 415.41 feet to a point;

THENCE, North 26° 28' 45" West, to the northwesterly corner of the Temporary Workspace, a distance of 60.70 feet to a point;

THENCE, North 63° 31' 15" East, along the northerly line of the Temporary Workspace, a distance of 125.00 feet, also crossing the northerly line of the Pipeline right-of-way for U.S. Forest Service Tract No. 1169A, to a point;

THENCE, North 03° 28' 10" East, to the northeasterly corner of the Temporary Workspace Right-of-way, a distance of 10.18 feet to a point, as shown in Exhibit B, sheet 4;

THENCE, South 86° 39' 16" East, along the easterly side of the Temporary Workspace, a distance of 368.80 feet to a point;

VAES-058143-05

THENCE, South 60° 48' 34" East, a distance of 75.38 feet to a point;

THENCE, South 16° 39' 27" East, a distance of 223.22 feet to a point;

THENCE, South 41° 24' 07" East, a distance of 295.29 feet to a point;

THENCE, South 57° 17' 38" East, a distance of 229.29 feet to a point;

THENCE, North 58° 34' 10" East, a distance of 154.39 feet to a point;

THENCE, North 71° 29' 27" East, a distance of 214.31 feet to a point;

THENCE, South 79° 27' 34" East, a distance of 94.34 feet to a point;

THENCE, South 10° 32' 26" West, a distance of 12.50 feet to a point;

THENCE, South 34° 45' 17" East, a distance of 82.23 feet to a point;

THENCE, South 34° 45' 17" East, a distance of 168.65 feet to a point;

THENCE, South 28° 24' 25" East, a distance of 111.12 feet to a point;

THENCE, South 42° 12' 25" East, a distance of 20.22 feet to a point;

THENCE, South 83° 31' 07" East, a distance of 43.40 feet to a point;

THENCE, South 22° 16' 23" East, a distance of 69.15 feet to a point;

THENCE, South 05° 18' 21" East, a distance of 96.75 feet to a point;

THENCE, South 25° 37' 38" East, a distance of 90.44 feet to a point;

THENCE, South 45° 24' 06" East, a distance of 70.23 feet to a point;

THENCE, South 55° 37' 58" East, a distance of 88.91 feet to a point;

THENCE, South 73° 17' 55" East, a distance of 258.56 feet to the southeasterly corner of the Temporary Workspace and a point on a line of U.S. Forest Service Tract No. 1130A;

THENCE, South 47° 00' 35" West, a distance of 144.32 feet, with the line of U.S. Forest Service Tract Nos. 1169A and 1130A, on the southerly line of the Temporary Workspace, to the POINT OF BEGINNING, containing 7.54 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143 05

**U.S. Forest Service Tract No. 1426
Monroe County, VA**

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 1426. This tract is located in Red Sulphur District, Monroe County, West Virginia. This tract was conveyed to the United States of America from Jack and Doris J. McDaniel by a deed dated January 3, 1990, found in the Office of the Clerk, Monroe County, West Virginia, in Deed Book 187, page 793. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this additional Temporary Workspace. The additional Temporary Workspace is more particularly described as follows:

COMMENCING at a corner of U.S. Forest Service Tract No. 1426 and a tract of land owned by James Henry Kelley, Jr., et ux., monumented with a 2-inch diameter aluminum pipe with a cap marked "3-1426-1988", as shown in Exhibit B, sheet 4.

THENCE, South 62° 01' 09" West, from the 2-inch diameter aluminum pipe, a distance of 2164.84 feet, to a point on the northerly line of this Temporary Workspace and at the center of the northerly line of the Pipeline right-of-way for U.S. Forest Service Tract 1426 and the **POINT OF BEGINNING** of the herein described tract;

THENCE, North 62° 01' 09" East, along the northerly line of the Temporary Workspace, with the James Henry Kelley, Jr., et ux., tract, a distance of 37.51 feet to the northeasterly corner;

THENCE, South 26° 28' 45" East, leaving the tract of land owned by James Henry Kelley, Jr., et ux., along the easterly line of the Temporary Workspace, a distance of 143.55 feet to the southeasterly corner;

THENCE, South 63° 31' 15" West, along the southerly line of the Temporary Workspace, a distance of 125.00 feet to the southwesterly corner;

THENCE, North 26° 28' 45" West, along the westerly line of the Temporary Workspace, a distance of 140.29 feet to the northwesterly corner at a point on the line of the James Henry Kelley, Jr., et ux., tract. From this point, a 2-inch diameter aluminum pipe, with a cap marked "2-1426-1988", bears South 62° 01' 09" West, a distance of 862.53 feet;

THENCE, North 62° 01' 09" East, along the northerly line of the Temporary Workspace with the James Henry Kelley, Jr., et ux., tract, a distance of 87.53 feet to the **POINT OF BEGINNING**, containing 0.41 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 201, Area 1
Montgomery County, VA

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 201. This tract is located in Mount Tabor District, Montgomery County, Virginia. This tract was conveyed to the United States of America from Max N. Manbeck, et al., by a deed dated February 19, 1937 and recorded in the Clerk's Office in Deed Book 105, page 256. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this additional Temporary Workspace. The additional Temporary Workspace is more particularly described as follows:

Commencing at a of U.S. Forest Service Tract No. 201 and a tract of land owned by the Wingo Living Trust, C/O Donald L. Wingo, et al, monumented with a 2-inch diameter aluminum pipe with cap, as shown in Exhibit B, sheet 5.

THENCE, South 16° 14' 28" East, a distance of 1125.68 feet from the 2-inch diameter aluminum pipe to the center of the Temporary Workspace and the center of the Pipeline right-of-way for U.S. Forest Service Tract No. 201 Area 1, and the POINT OF BEGINNING of the herein described tract;

THENCE, North 16° 14' 28" West, on the northerly line of the Temporary Workspace, a distance of 90.85 feet, and with the line of U.S. Forest Service Tract No. 201 and the Wingo Living Trust, C/O Donald L. Wingo, et al. tract, to a point;

THENCE, North 58° 09' 25" East, leaving the Wingo Living Trust, C/O Donald L. Wingo, et al. tract, along the easterly side of the Temporary Workspace, a distance of 49.13 feet to a point;

THENCE, North 87° 28' 29" East, a distance of 228.54 feet to a point;

THENCE, South 86° 54' 57" East, a distance of 47.92 feet to a point;

THENCE, South 03° 05' 03" West, a distance of 50.00 feet to a point;

THENCE, South 86° 54' 57" East, a distance of 123.32 feet to a point,

THENCE, South 03° 05' 03" West, a distance of 12.50 feet to a point;

THENCE, South 86° 54' 57" East, a distance of 100.00 feet to a point;

THENCE, North 03° 05' 03" East, a distance of 12.50 feet to a point;

THENCE, South 86° 54' 57" East, a distance of 123.07 feet to a point;

THENCE, South 54° 29' 18" East, a distance of 140.27 feet to a point;

THENCE, North 35° 30' 42" East, a distance of 50.00 feet to a point;

THENCE, South 54° 29' 18" East, a distance of 381.57 feet to a point;

VAES-058143-05

THENCE, South 23° 35' 38" East, a distance of 193.81 feet to a point;

THENCE, South 00° 27' 21" West, a distance of 2311.30 feet to a point;

THENCE, South 30° 17' 13" East, to the southeasterly corner of the Temporary Workspace a distance of 192.34 feet, to a point on the line of U.S. Forest Service Tract No. 527;

THENCE, North 33° 38' 48" West, along the southerly line of the Temporary Workspace to the southwesterly corner, and with the line of U.S. Forest Service Tract No. 527, a distance of 398.31 feet; crossing the Pipeline right-of-way for U.S. Forest Service Tract No. 527, area 2, and Tract No. 201 Area 1;

THENCE, North 00° 27' 21" East, along the westerly line of the Temporary Workspace, leaving U.S. Forest Service Tract 527, for a distance of 2120.18 feet to a point;

THENCE, North 23° 35' 38" West, a distance of 132.65 feet to a point;

THENCE, North 54° 29' 18" West, a distance of 465.49 feet to a point;

THENCE, North 86° 54' 57" West, a distance of 101.26 feet to a point;

THENCE, South 03° 05' 03" West, a distance of 12.50 feet to a point;

THENCE, North 86° 54' 57" West, a distance of 100.00 feet to a point;

THENCE, North 03° 05' 03" East, a distance of 12.50 feet to a point;

THENCE, North 86° 54' 57" West, a distance of 165.11 feet to a point;

THENCE, South 87° 28' 29" West, a distance of 189.72 feet to a point;

THENCE, South 58° 09' 25" West, to the northwesterly corner of the Temporary Workspace a distance of 51.34 feet, and a point on the line of the aforementioned Wingo Living Trust, C/O Donald L. Wingo, et al. tract. From this point, a corner to U.S. Forest Service Tract No. 201 and the Wingo Living Trust, C/O Donald L. Wingo, et al. tract, monumented with a 1-inch diameter bent iron pipe, in a small pile of stone, bears South 16° 14' 28" East, a distance of 80.68 feet, as shown in Exhibit B, sheet 5;

THENCE, North 16° 14' 28" West, along the northerly Temporary Workspace line and the Wingo Living Trust, C/O Donald L. Wingo, et al. tract, a distance of 38.93 feet, to the POINT OF BEGINNING, containing 9.60 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 201, Area 2
Montgomery County, VA

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 201. This tract is located in Mount Tabor District, Montgomery County, Virginia. This tract was conveyed to the United States of America from Max N. Manbeck, et al., by a deed dated February 19, 1937 and recorded in the Clerk's Office in Deed Book 105, page 256. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this additional Temporary Workspace. The additional Temporary Workspace is more particularly described as follows:

BEGINNING at a point on a line of U.S. Forest Service Tract No. 527, and at the southeasterly corner of the Temporary Workspace for U.S. Forest Service Tract No. 201 Area 1, being the northerly corner of this Temporary Workspace and the **POINT OF BEGINNING** of the herein described tract;

THENCE, South 42° 49' 41" East, along the easterly line of the Temporary Workspace, a distance of 114.45 feet, leaving U.S. Forest Service Tract No. 527 and through U.S. Forest Service Tract No. 201, to a point;

THENCE, South 30° 17' 13" East, to a point on the line of the aforementioned U.S. Forest Service Tract No. 527, and the southerly corner of this Temporary Workspace, for a distance of 311.61 feet;

THENCE, North 33° 38' 48" West, along the westerly line of the Temporary Workspace and with the line of U.S. Forest Service Tract No. 527, a distance of 424.06 feet to the **POINT OF BEGINNING**, containing 0.09 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

**U.S. Forest Service Tract No. 201, Area 3
Montgomery County, VA**

An additional Temporary Workspace for the purposes of constructing a natural gas pipeline upon a tract of land described as U.S. Forest Service Tract No. 201. This tract was conveyed to the United States of America from Max N. Manbeck, et al., by a deed dated February 19, 1937, found in the Clerk's Office of the Circuit Court of Montgomery County, Virginia in Deed Book 105 at page 256. This tract of land is situated in Mount Tabor District, Montgomery County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided as Exhibit B. Allegheny Surveys Inc. also produced a legal description for this additional Temporary Workspace. The additional Temporary Workspace is more particularly described as follows:

Commencing at a corner of U.S. Forest Service Tract No. 201 and a corner of a tract of land owned by Sandra Townes Powell, monumented with a 2-inch diameter aluminum pipe with cap marked "9/1630 1995", in a pile of stones, as shown in Exhibit B, sheet 5.

THENCE, South 71° 59' 54" West, a distance of 1525.09 feet from the 2-inch diameter aluminum pipe, to the center of the proposed Temporary Workspace and the center of the proposed permanent right-of-way in U.S. Forest Service Tract No. 201 Area 2; and a point on line of U.S. Forest Service Tract No. 201 and the Dyer Family Trust Tract, and the POINT OF BEGINNING of the herein described tract;

THENCE, South 71° 59' 54" West, on the southerly line of the proposed Temporary Workspace, a distance of 50.01 feet to its southwesterly corner. From this point, a 2-inch diameter aluminum pipe with cap marked "CLS-1361" a corner to U.S. Forest Service Tract No. 527 and the Dyer Family Trust Tract, bears South 71 °59' 54" West, a distance of 25.88 feet, as shown in Exhibit "A", sheet 5;

THENCE, North 59° 25' 31" West, along the westerly line of the proposed Temporary Workspace, a distance of 57.31 feet, through U.S. Forest Service Tract No. 201;

THENCE, North 33° 38' 48" West, crossing the proposed permanent right-of-way for U.S. Forest Service Tract Nos. 201 Area 2 and 527 Area 2, a distance of 287.43 feet, to a corner of the proposed Temporary Workspace for U.S. Forest Service Tract No. 527, Area 2;

THENCE, South 59° 25' 31" East, on the easterly line of the proposed Temporary Workspace, a distance of 426.42 feet, to a point on its southerly line and the aforementioned Dyer Family Trust Tract and the proposed Permanent Right-of-way for U.S. Forest Service Tract No.201 Area 2;

THENCE, South 71° 59' 54" West, on the southerly line of the proposed Temporary Workspace for a distance of 116.69 feet, to the POINT OF BEGINNING, containing 0.69 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

**U.S. Forest Service Tract No. 527, Area 1
Montgomery County, VA**

A proposed Temporary Workspace Right-of-way for the purposes of a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 527. This tract was conveyed to the United States of America from American Security & Trust Company, et al., by a deed dated March 11, 1940, found in the Clerk's Office of the Circuit Court of Montgomery County, Virginia in Deed Book 115 at page 385. This tract of land is situated in Mount Tabor District, Montgomery County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided with this document and is shown as Exhibit "A". Allegheny Surveys Inc. also produced a deed description for this proposed right-of-way titled "Description of Permanent Right-of-way for Mountain Valley Pipeline, LLC United States of America Forest Service Tract No. 527 Various Width Temporary Pipeline Workspace Right-of-way Area 1 11.94 Acres" signed November 18, 2020, which is provided with this document and is shown as Exhibit "B". The proposed right-of-way is more particularly described as follows:

Commencing at a corner of 3 tracts of land, U.S. Forest Service Tract No. 527, a tract of land owned by George C. Hall, Jr., and a tract of land owned by Robert W. Crawford, et ux., monumented with a pile of stones painted red, as shown in Exhibit "A", sheet 5;

THENCE, South 69° 03' 23" West, a distance of 820.64 feet from the pile of stones painted red to a corner common with the center of the proposed Permanent Right-of-way for U.S. Forest Service Tract No. 527 and the POINT OF BEGINNING of the herein described tract;

THENCE, North 58° 38' 45" East, on the northerly line of the proposed Permanent Pipeline Right-of-way and with the line of U.S. Forest Service Tract No. 527, Area 1, and George C. Hall Jr., a distance of 62.66 feet to a point. From this point, a corner of U.S. Forest Service Tract No. 527 and the tract of land owned by George C. Hall, bears North 58° 38' 45" East, being an angle point on the top of a mountain as described by deed, not monumented, a distance of 74.50 feet, as shown in Exhibit "A", sheet 5.

THENCE, South 27° 12' 58" East, through U.S. Forest Service Tract No. 527, and along the easterly side of the proposed Temporary Workspace Right-of-way, a distance of 12.96 feet to a point;

THENCE, North 62° 47' 02" East, a distance of 25.00 feet to a point;

THENCE, South 27° 12' 58" East, a distance of 146.87 feet to a point;

THENCE, South 15° 21' 35" East, a distance of 355.50 feet to a point,

THENCE, South 37° 18' 50" East, a distance of 764.04 feet to a point;

THENCE, South 52° 41' 10" West, a distance of 50.00 feet to a point;

THENCE, South 37° 18' 50" East, a distance of 184.98 feet to a point;

THENCE, North 52° 41' 10" East, a distance of 50.00 feet to a point;

THENCE, South 37° 18' 50" East, a distance of 1610.87 feet to a point;

VAES-058143-05

THENCE, South 52° 41' 10" West, a distance of 50.00 feet to a point;

THENCE, South 37° 18' 50" East, a distance of 189.28 feet to a point;

THENCE, North 52° 41' 10" East, a distance of 50.00 feet to a point;

THENCE, South 37° 18' 50" East, a distance of 146.50 feet to a point;

THENCE, South 52° 41' 10" West, a distance of 50.00 feet to a point;

THENCE, South 37° 18' 50" East, a distance of 151.15 feet to a point;

THENCE, North 52° 41' 10" East, a distance of 50.00 feet to a point;

THENCE, South 37° 18' 50" East, to the southeasterly corner of the proposed Temporary Workspace Right-of-way a distance of 820.13 feet, to a point on a tract of land owned by Wendell Lee Hypes Third Party, Special Needs Trust. From this point, a pile of stones, a corner to U.S. Forest Service Tract No. 527 and tract of land owned by Terry L. Wingo, bears North 67° 08' 05" East, a distance of 665.23 feet, as shown in Exhibit "A", sheet 5.

THENCE, South 67° 08' 05" West, on the southerly line of the proposed Temporary Workspace Right-of-way and with the line of U.S. Forest Service Tract No. 527 and Wendell Lee Hypes Third Party, Special Needs Trust, a distance of 129.08 feet, crossing the proposed Permanent Pipeline Right-of-way for U.S. Forest Service Tract No. 527, Area 1, to the southwesterly corner of the proposed Temporary Workspace Right-of-way;

THENCE, North 37° 18' 50" West, along the westerly side of the proposed Temporary Workspace Right-of-way, a distance of 3858.98 feet to a point;

THENCE, North 15° 21' 35" W 366.76 feet to a point;

THENCE, North 27° 12' 58" West, to the northwesterly corner of the proposed Temporary Workspace Right-of-way a distance of 139.62 feet, to a point on the tract of land owned by George C. Hall, Jr. From this point, a corner of U.S. Forest Service Tract No. 527 and the tract of land owned by George C. Hall, bears, South 58° 38' 45" West, being an angle point on the top of a mountain as described by deed, not monumented, a distance 78.56 feet, as shown in Exhibit "A", sheet 5.

THENCE, North 58° 38' 45" East, a distance of 37.60 feet, to the POINT OF BEGINNING, containing 11.94 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 527, Area 2
Montgomery County, VA

A proposed Temporary Workspace Right-of-way for the purposes of a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 527. This tract was conveyed to the United States of America from American Security & Trust Company, et al., by a deed dated March 11, 1940, found in the Clerk's Office of the Circuit Court of Montgomery County, Virginia in Deed Book 115 at page 385. This tract of land is situated in Mount Tabor District, Montgomery County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided with this document and is shown as Exhibit "A". Allegheny Surveys Inc. also produced a deed description for this proposed right-of-way titled "Description of Temporary Workspace for Mountain Valley Pipeline, LLC United States of America Forest Service Tract No. 527 Various Width Permanent Pipeline Right-of-way Area 2 3.75 Acres" signed December 16, 2020, which is provided with this document and is shown as Exhibit "B". The proposed right-of-way is more particularly described as follows:

BEGINNING at the southwesterly corner of the proposed Temporary Workspace Right-of-way to U.S. Forest Service Tract No. 201, Area 1, and the northerly corner of this proposed workspace, not monumented, shown in Exhibit "A", sheet 5. **THENCE**, South 33° 38' 48" East, on the easterly line of the proposed Temporary Workspace Right-of-way, a distance of 398.31 feet, to the southeasterly corner of the proposed Temporary Workspace Right-of-way for U.S. Forest Service Tract No. 201, crossing the proposed Permanent Pipeline right-of-way for U.S. Forest Service Tract Nos. 201 and 527 on the line of the 2 tracts;

THENCE, South 30° 17' 13" East, leaving U.S. Forest Service Tract No. 201, for a distance of 1.86 feet to a point;

THENCE, South 42° 49' 41" East, to a point again on the line of said U.S. Forest Service Tract No. 201 for a distance of 0.68 feet;

THENCE, South 33° 38' 48" East, with said U.S. Forest Service Tract No. 201, for a distance of 424.06 feet to a point;

THENCE, South 30° 17' 13" East, leaving U.S. Forest Service Tract No. 201, for a distance of 412.34 feet to a point;

THENCE, South 59° 25' 31" East, to a point again on the line of said U.S. Forest Service Tract No. 201; for a distance of 55.57 feet;

THENCE, South 33° 38' 48" East, with said U.S. Forest Service Tract No. 201, to the center point of the proposed Permanent Pipeline right-of-way for U.S. Forest Service Tract Nos. 201 and 527 for a distance of 204.00 feet, being a point on a line of the Dyer Family Trust Tract;

THENCE, South 50° 14' 50" West, to the southerly point of this proposed workspace, for a distance of 38.54 feet to a point;

THENCE, North 59° 25' 31" West, along the westerly line of this proposed workspace, for a distance of 258.77 feet to a point;

VAES-058143-05

THENCE, North 30° 17' 13" West, for a distance of 742.70 feet to a point;

THENCE, North 42° 49' 41" West, for a distance of 115.13 feet to a point;

THENCE, North 30° 17' 13" West, for a distance of 242.29 feet to a point;

THENCE, North 00° 27' 21" East, for a distance of 198.86 to the POINT OF BEGINNING, containing 3.75 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

(MVP-ATWS-1372A)
U.S. Forest Service Tract No. 527
Montgomery County, VA

A proposed Additional Temporary Workspace Right-of-way for the purposes of a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 527. This tract was conveyed to the United States of America from American Security & Trust Company, et al., by a deed dated March 11, 1940, found in the Clerk's Office of the Circuit Court of Montgomery County, Virginia in Deed Book 115 at page 385. This tract of land is situated in Mount Tabor District, Montgomery County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided with this document and is shown as Exhibit "A". Allegheny Surveys Inc. also produced a deed description for this proposed right-of-way titled "Description of Additional Temporary Workspace for Mountain Valley Pipeline, LLC United States of America Forest Service Tract No. 527 Additional Temporary Workspace Right-of-way (MVP-ATWS-1372A) 0.26 Acres" signed November 18, 2020, which is provided with this document and is shown as Exhibit "B". The proposed right-of-way is more particularly described as follows:

COMMENCING at a point on the center of the proposed Permanent Pipeline Right-of-way for U.S. Forest Service Tract No. 527, Area 1, not monumented, as shown in Exhibit "A", Sheet 5;

THENCE, South 14° 31' 41" East, along a blank line, a distance of 513.82 feet, to the northeasterly corner of this proposed Additional Temporary Workspace Right-of-way a corner on the westerly line of a proposed Temporary Workspace for U.S. Forest Service Tract No. 527 Area 1, being the **POINT OF BEGINNING** of the herein described tract;

THENCE, South 37° 18' 50" East, along the easterly line of this proposed Additional Temporary Workspace Right-of-way, with the westerly line of the proposed Temporary Workspace for U.S. Forest Service Tract No. 527, Area 1, a distance of 150.00 feet to the southeasterly corner;

THENCE, South 52° 41' 10" West, along the southerly line of this proposed Additional Temporary Workspace Right-of-way, leaving the proposed Temporary Workspace Right-of-way for U.S. Forest Service Tract No. 527 Area 1, a distance of 75.00 feet to the southwesterly corner;

THENCE, North 37° 18' 50" West, along the westerly line of this proposed Additional Temporary Workspace Right-of-way, a distance of 150.00 feet, to the northwesterly corner;

THENCE, North 52° 41' 10" East, along the northerly line of this proposed Additional Temporary Workspace Right-of-way, a distance of 75.00 feet to the **POINT OF BEGINNING**, containing 0.26 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

(MVP-ATWS-1372)
U.S. Forest Service Tract No. 527
Montgomery County, VA

A proposed Additional Temporary Workspace Right-of-way for the purposes of a natural gas pipeline upon a tract of land identified as U.S. Forest Service Tract No. 527. This tract was conveyed to the United States of America from American Security & Trust Company, et al., by a deed dated March 11, 1940, found in the Clerk's Office of the Circuit Court of Montgomery County, Virginia in Deed Book 115 at page 385. This tract of land is situated in Mount Tabor District, Montgomery County, Virginia. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided with this document and is shown as Exhibit "A". Allegheny Surveys Inc. also produced a deed description for this proposed right-of-way titled "Description of Additional Temporary Workspace for Mountain Valley Pipeline, LLC United States of America Forest Service Tract No. 527 Additional Temporary Workspace Right-of-way (MVP-ATWS-1372) 0.29 Acres" signed November 18, 2020, which is provided with this document and is shown as Exhibit "B". The proposed right-of-way is more particularly described as follows:

COMMENCING at a point on the center of the proposed Permanent Pipeline Right-of-way for U.S. Forest Service Tract No. 527, Area 1, not monumented, as shown in Exhibit "A", Sheet 5;

THENCE, South 28° 51' 43" East, along a blank line, a distance of 503.43 feet, to the northwesterly corner of this proposed Additional Temporary Workspace Right-of-way a corner on the easterly line of a proposed Temporary Workspace for U.S. Forest Service Tract No. 527 Area 1, being the **POINT OF BEGINNING** of the herein described tract;

THENCE, North 52° 41' 10" East, along the northerly line of this proposed Additional Temporary Workspace Right-of-way, through U.S. Forest Service Tract No. 527, a distance of 85.00 feet to the northeasterly corner;

THENCE, South 37° 18' 50" East, along the easterly line of this proposed Additional Temporary Workspace Right-of-way, a distance of 150.00 feet to the southeasterly corner;

THENCE, South 52° 41' 10" West, along the southerly line of this proposed Additional Temporary Workspace Right-of-way, a distance of 85.00 feet to the southwesterly corner, being a point on the aforementioned proposed Temporary Workspace for U.S. Forest Service Tract No. 527, Area 1;

THENCE, North 37° 18' 50" West, along the westerly line of this proposed Additional Temporary Workspace Right-of-way, a distance of 150.00 feet, to the **POINT OF BEGINNING**, containing 0.29 acres of land.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

VAES-058143-05

U.S. Forest Service Tract No. 1130A and 1169A
Giles County, VA

A Temporary Workspace Road Disturbance Area upon 2 tracts of land. The first tract is identified as U.S. Forest Service Tract No. 1130A. This tract was conveyed to the United States of America from National Gypsum Company by a deed dated December 28, 1984, found in the Clerk's Office of the Circuit Court of Giles County, Virginia in Deed Book 187, page 528. This tract is located in the Eastern District, Giles County, Virginia. The second tract is identified as U.S. Forest Service Tract No. 1169A. This tract was conveyed to the United States of America from American Resources, Inc. by a deed dated December 5, 1983, found in the Clerk's Office of Guiles County, Virginia, in Deed Book 182, page 717. A survey conducted by Allegheny Surveys Inc., signed December 16, 2020, titled "Exhibit Map prepared for Mountain Valley Pipeline LLC showing a proposed pipeline route through U.S. Forest Service Lands", is provided with this document and is shown as Exhibit "A". Allegheny Surveys Inc. also produced a deed description for this proposed right-of-way titled "Description of Permanent Right-of-way for Mountain Valley Pipeline, LLC United States of America Forest Service Tract Nos. 1130A & 1169A 25' Wide Access Road Temporary Workspace for Mystery Ridge Road 2.27 Acres" signed November 18, 2020, which is provided with this document and is shown as Exhibit "B". The proposed right-of-way whose limits generally extend 5 feet left and 20 feet right of the following described centerline, with the exception of one area that extends 20 feet left as described below. the center line of which is more particularly described as follows:

BEGINNING AT A POINT at the center of the proposed right-of-way, on the line with U.S. Forest Service Tract No. 1130A and a tract of land owned by the Ray H. Snider Estate. From this center point, a corner to the 2 properties, occupied by a 14 inch diameter chestnut oak, marked with 3 hacks, bears North 35° 15' 22" East, a distance of 37.69 feet. Also, from this same center point, a corner to the same 2 properties, occupied by a white oak, marked with 3 hacks, bears South 35° 15' 22" West, a distance of 603.02 feet, as shown in Exhibit "A", Sheet 6. Thence from the **POINT OF BEGINNING**, the following 62 courses through U.S. Forest Service Tract No. 1130A:

- 1) North 07° 19' 38" West, 43.05 feet;
- 2) North 53° 06' 24" East, 29.51 feet;
- 3) North 75° 24' 34" East, 86.31 feet;
- 4) North 27° 45' 28" East, 65.75 feet;
- 5) North 04° 38' 06" West, 58.61 feet;
- 6) North 06° 57' 40" East, 75.16 feet;
- 7) North 05° 03' 47" West, 92.30 feet;
- 8) North 06° 46' 05" West, 84.84 feet;
- 9) North 02° 27' 12" East, 154.77 feet;
- 10) North 13° 13' 28" East, 124.45 feet;
- 11) North 34° 06' 52" West, 42.77 feet;
- 12) North 55° 17' 35" West, 39.90 feet;
- 13) North 44° 32' 03" West, 36.95 feet;
- 14) North 59° 56' 15" West, 51.67 feet;
- 15) North 55° 22' 03" West, 47.38 feet;
- 16) North 38° 38' 51" West, 52.93 feet;
- 17) North 41° 39' 27" West, 50.51 feet;
- 18) North 46° 59' 43" West, 83.98 feet;
- 19) North 33° 07' 28" West, 68.28 feet;
- 20) North 26° 25' 18" West, 62.90 feet;

VAES-058143-05

- 21) North 30° 24' 14" West, 41.86 feet;
 - 22) North 26° 43' 35" West, 67.03 feet;
 - 23) North 25° 39' 19" West, 66.71 feet;
 - 24) North 34° 43' 29" West, 40.76 feet;
 - 25) North 24° 14' 16" West, 28.31 feet;
 - 26) North 10° 13' 58" West, 29.42 feet;
 - 27) North 14° 09' 02" East, 36.70 feet;
 - 28) North 10° 27' 40" East, 56.99 feet;
 - 29) North 13° 23' 47" East, 51.34 feet;
 - 30) North 16° 18' 45" East, 37.03 feet;
 - 31) North 19° 17' 47" East, 42.30 feet;
 - 32) North 21° 27' 16" East, 61.95 feet;
 - 33) North 15° 33' 33" East, 47.37 feet;
 - 34) North 19° 00' 40" East, 74.56 feet;
 - 35) North 21° 27' 07" East, 72.45 feet;
 - 36) North 31° 22' 03" East, 70.34 feet;
 - 37) North 27° 53' 12" East, 39.07 feet;
 - 38) North 31° 15' 24" East, 45.76 feet;
 - 39) North 24° 54' 55" East, 69.89 feet;
 - 40) North 40° 43' 11" East, 80.24 feet;
 - 41) North 17° 44' 51" East, 43.50 feet;
 - 42) North 21° 39' 53" West, 86.57 feet;
 - 43) North 32° 18' 36" West, 65.46 feet;
 - 44) North 20° 03' 14" West, 31.90 feet;
 - 45) North 21° 13' 47" West, 106.20 feet;
 - 46) North 30° 05' 18" West, 52.50 feet; and thence with the limits continuing as 5 feet left for part of a line and extending to 20 feet right for its remainder;
 - 47) North 45° 26' 49" West, 56.16 feet; and thence with the limits extending 20 feet left and 20 feet right for five lines;
 - 48) North 52° 49' 42" West, 55.71 feet;
 - 49) North 54° 54' 22" West, 63.10 feet;
 - 50) North 51° 15' 39" West, 41.07 feet;
 - 51) North 34° 48' 38" West, 35.80 feet;
 - 52) North 37° 01' 50" West, 41.73 feet; and thence with the limits continuing as extending 5 feet left and 20 feet right for its remainder;
 - 53) North 36° 17' 45" West, 40.59 feet;
 - 54) North 41° 25' 11" West, 47.79 feet;
 - 55) North 51° 24' 52" West, 56.07 feet;
 - 56) North 66° 58' 01" West, 89.34 feet;
 - 57) North 43° 52' 35" West, 54.02 feet;
 - 58) North 36° 22' 27" West, 9.37 feet;
 - 59) North 22° 43' 48" West, 86.24 feet;
 - 60) North 08° 11' 28" West, 45.80 feet;
 - 61) North 23° 15' 24" West, 77.81 feet;
 - 62) North 64° 37' 26" West, 85.95 feet;
- 1) North 72° 58' 44" West, 84.49 feet; leaving U.S. Forest Service Tract No. 1130A and entering U.S. Forest Service Tract No. 1169A;
 - 2) South 43° 51' 57" West, 20.13 feet to the POINT OF TERMINATION containing in total for the 2 tracts 2.27 acres.

VAES-058143-05

The sidelines of said strip shall be lengthened or shortened, as necessary, so as to intersect the boundaries of the various tracts of land.

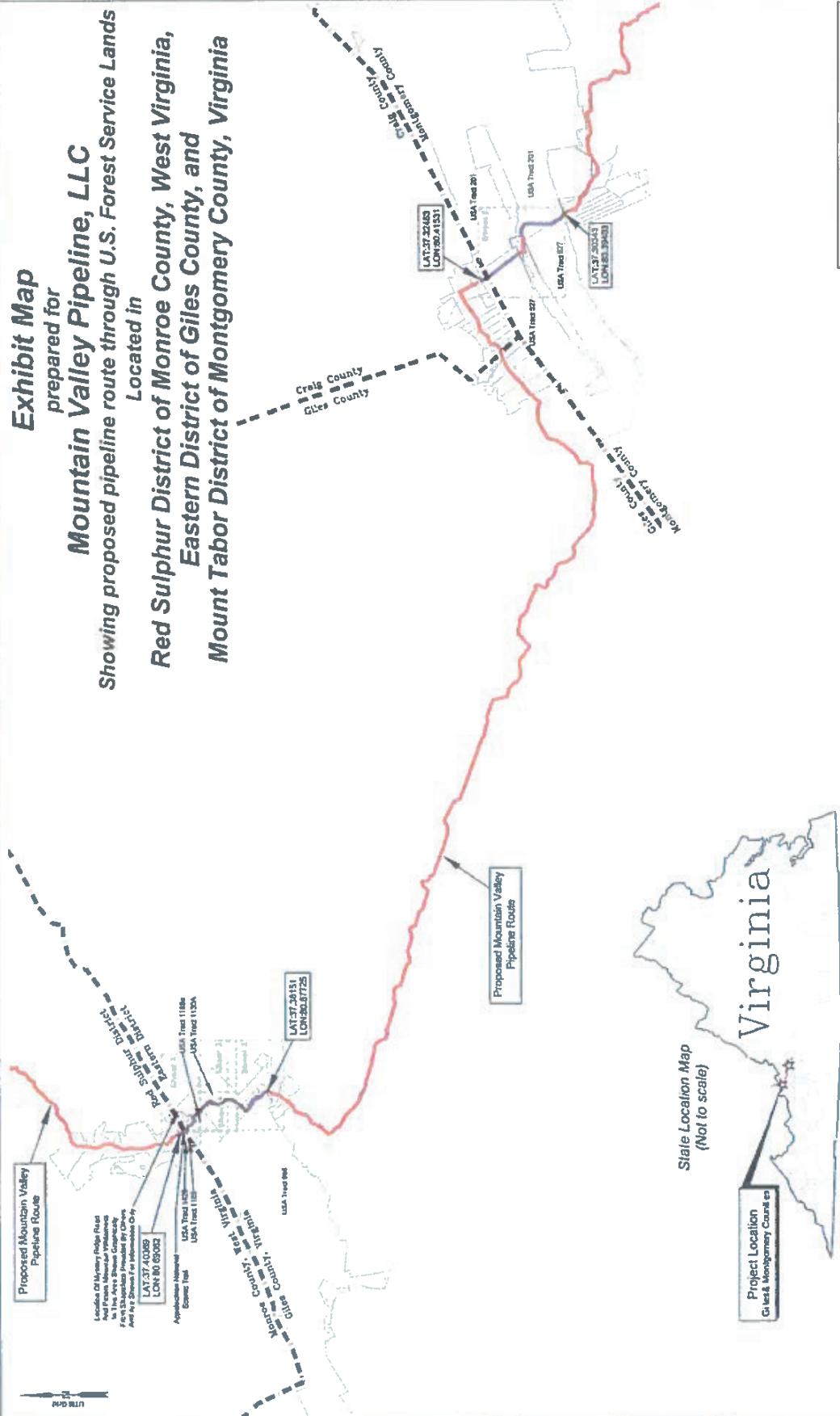
Note: The following is the acreage for each U.S. Forest Service Tract, this acreage is also shown in Exhibit "A" Sheet 1. Tract No. 1169A contains 0.05 acres. Tract No. 1130A contains 2.22 acres.

This survey is oriented to Grid North, and its coordinate base is the UTM System of 1983 (US Survey Feet), Zone 17.

Exhibits "A" and "B": Attached hereto and made a part of.

**Exhibit Map
prepared for
Mountain Valley Pipeline, LLC**

*Showing proposed pipeline route through U.S. Forest Service Lands
Located in
**Red Sulphur District of Monroe County, West Virginia,
Eastern District of Giles County, and
Mount Tabor District of Montgomery County, Virginia***



Engineering Agreements		Giles County, VA (Excludes District 10)		Monroe County, WV (Includes River Islands)		Montgomery County, VA (Includes River Islands)	
		Treel 1020	Treel 1102	Treel 1110	Treel 1115	Treel 1420	Treel 522
Pipeline Permanent Easement (A)	0.93 Ac:	5.76 Ac	3.50 Ac.	0.24 Ac	0.13 Ac.	4.16 Ac.	6.70 Ac.
Total Pipeline Construction Disturbance Areas (B)	2.80 Ac	13.86 Ac.	7.54 Ac.		0.41 Ac.	10.38 Ac.	15.89 Ac.
Access Road Construction Disturbance (C)	0.11 Ac.	2.22 Ac.	0.05 Ac.				0.55 Ac.
Additional Temporary Workspaces (D)							
Total Area for Construction Workspaces (E = A + B + C + D)	0.93 Ac	2.81 Ac.	18.10 Ac.	7.59 Ac	0.24 Ac.	0.41 Ac.	18.24 Ac.
Total Area of Permanent Easements (F = A + B + C)	0.93 Ac	5.76 Ac.	3.50 Ac.	0.24 Ac.	0.35 Ac.	4.16 Ac.	6.70 Ac.

SHEET INDEX	
Sheet No.	Description
1	Crown Sheet (This sheet)
2 - 4	Alleghany County, Virginia
5	Montgomery County, Virginia
6	Access Road Areas, Alleghany, Virginia



EXHIBIT B - MAPS

VAFES-058143-04

Page 2 of 6

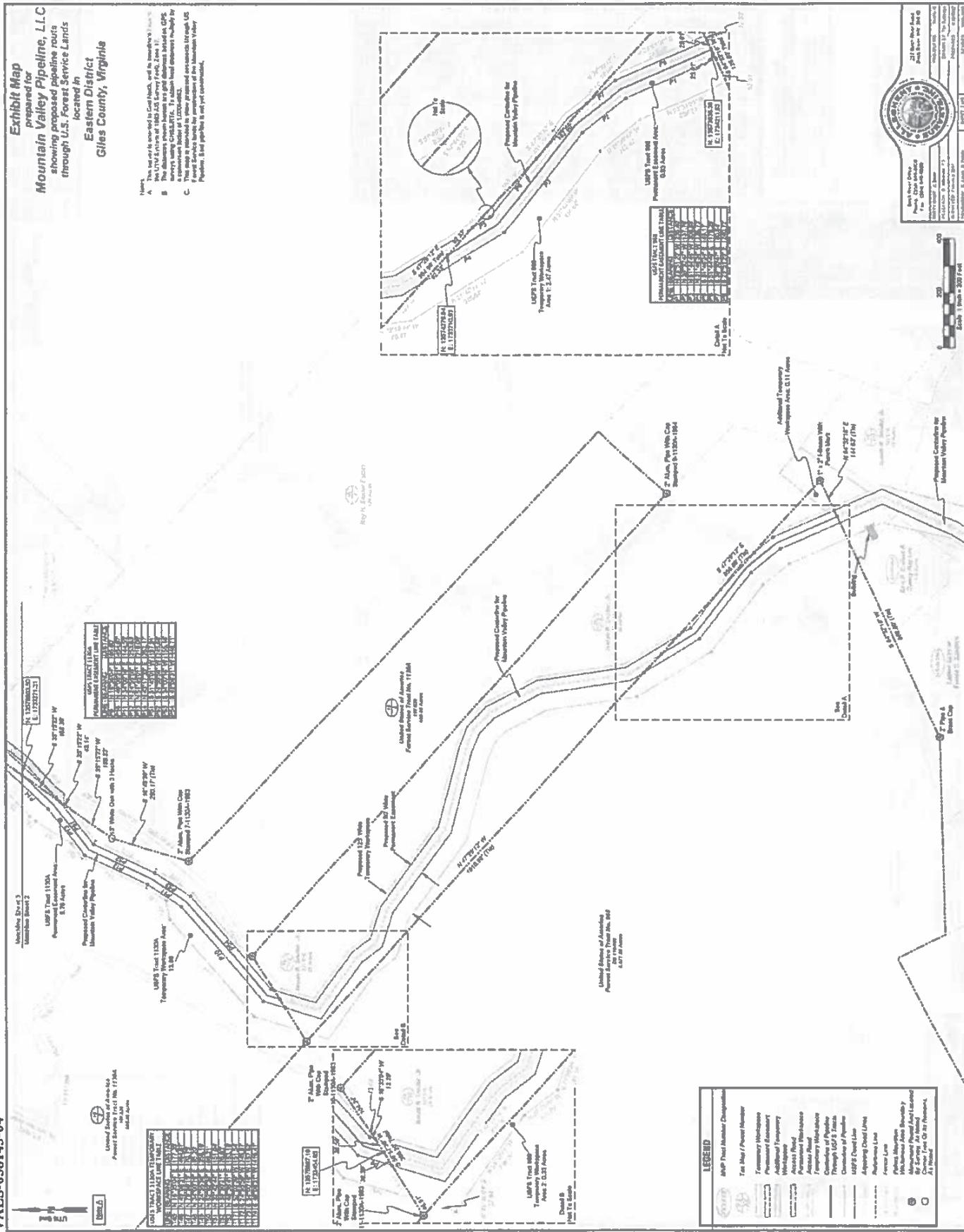
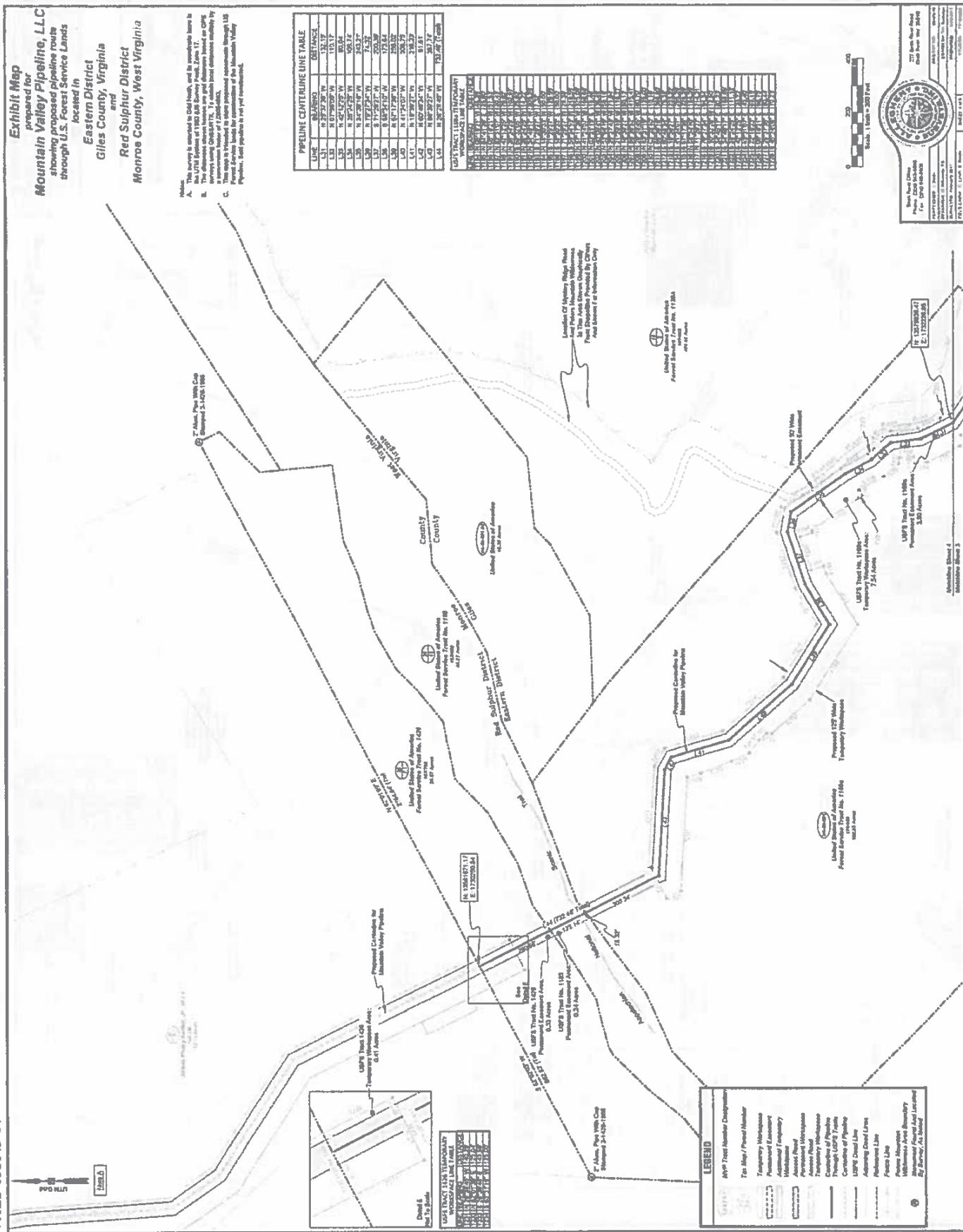


EXHIBIT B - MAPS

VA EFS-058143-04

Page 4 of 6



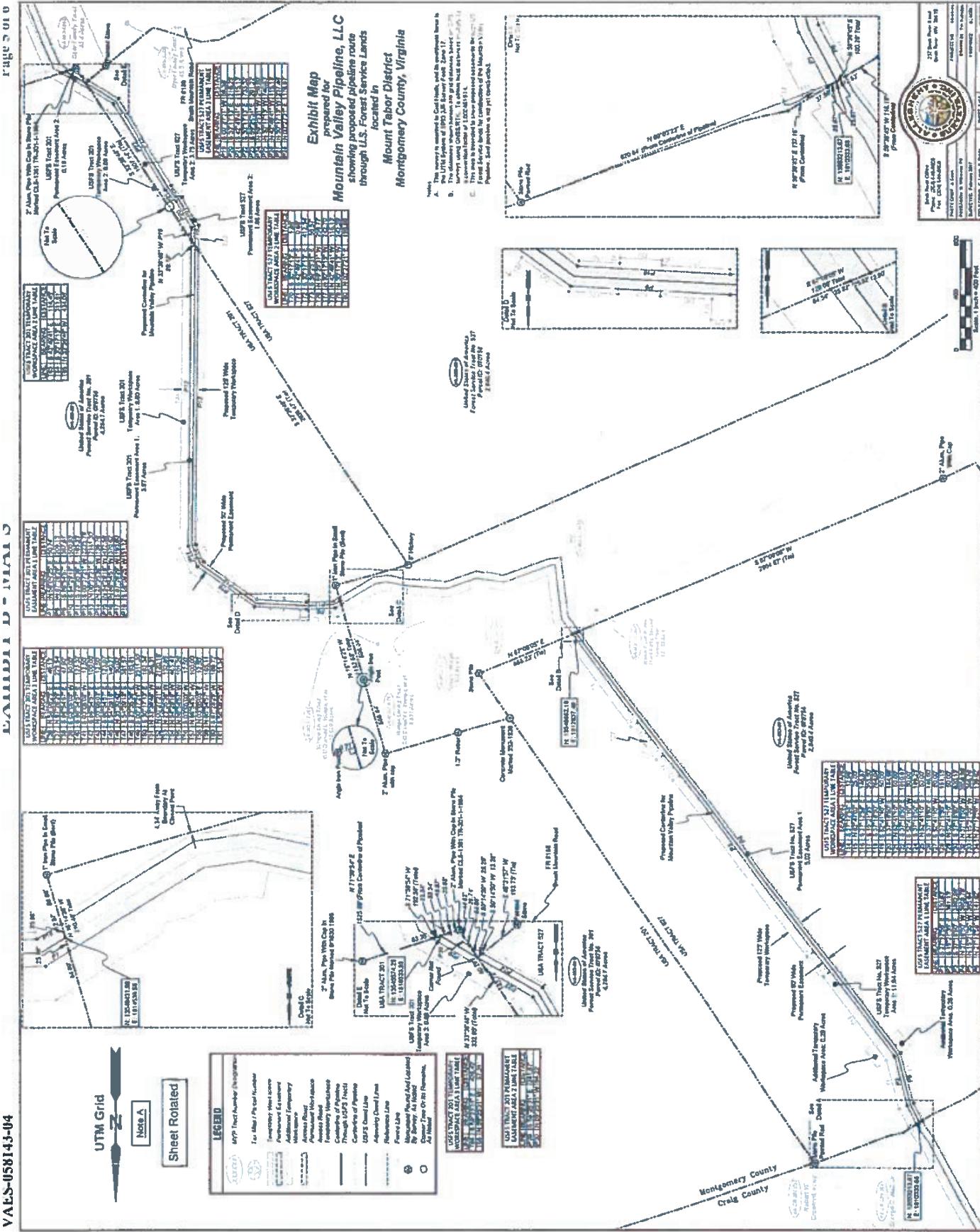


EXHIBIT B - MAPS

Page 6 of 6

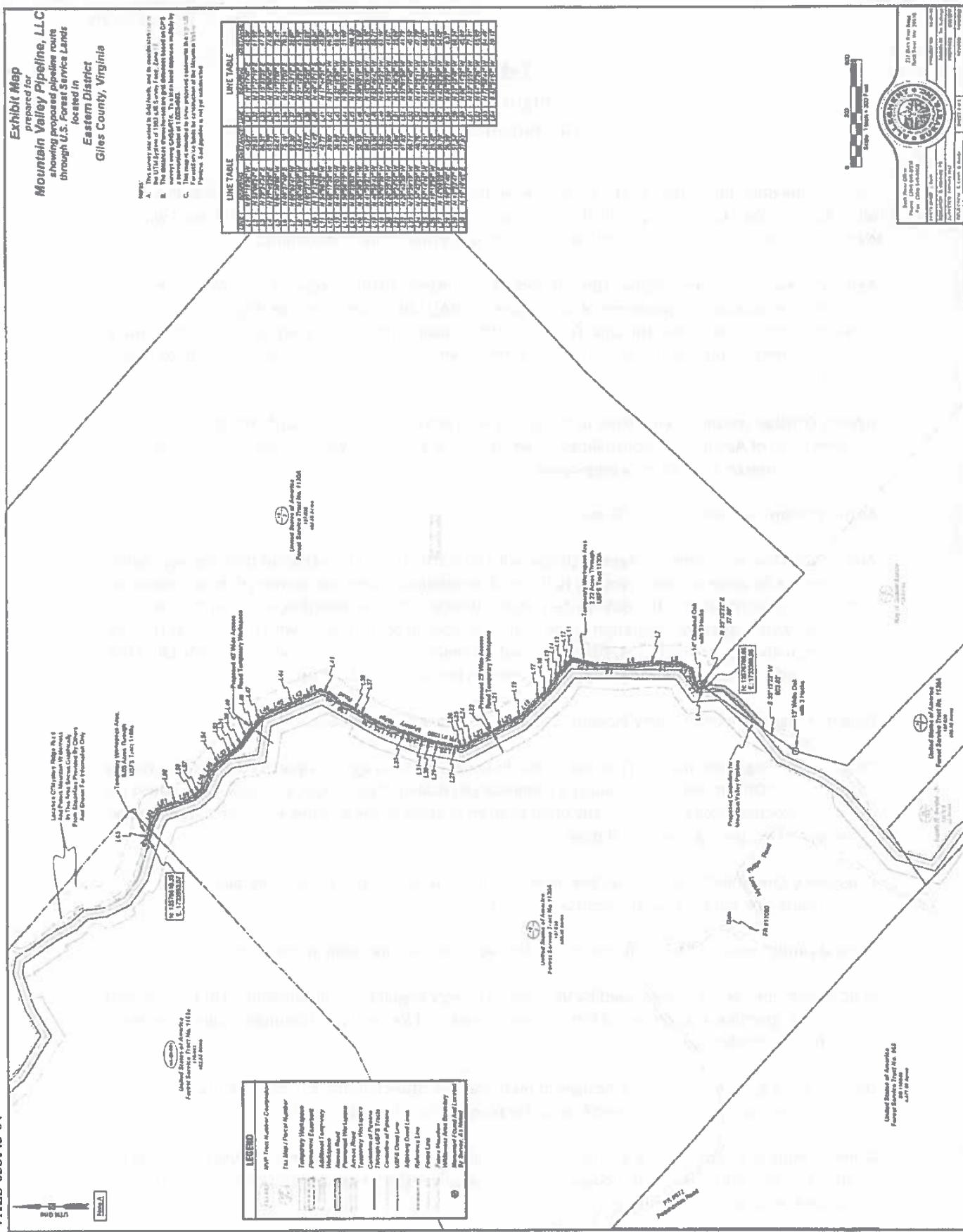


Exhibit C

Right-of-Way

Definition of Terms

The following definitions apply to the terms used in the Stipulations for the Mountain Valley Pipeline (MVP) Right-of-Way Grant. They shall also apply to terms used in those documents associated with the MVP Right-of-Way Grant unless specifically provided otherwise in such documents.

"Agency" means the federal agency (Department of the Interior [DOI], Bureau of Land Management [BLM], United States Department of Agriculture [USDA], USDA Forest Service [FS], or George Washington and Jefferson National Forest [GWJNF]) having jurisdiction over issuance of this Grant or over lands or interests in lands included in this Grant. The singular term can mean one or more Agencies.

"Agency Official" means an employee of an Agency who has been delegated authority to carry out some or all of Agency's responsibilities under this Grant and the governing laws. The singular term can mean one or more Agency employees.

"Authorization" see definition of "Grant".

"Authorized Officer" means the Agency Official with authority to sign on behalf of their Agency. With respect to issuance of Grant, Notices to Proceed, amendment, renewal, termination, variances, or bonding determinations, the BLM Eastern States Director, or their delegate, is the Authorized Officer. With respect to regulation of the Grant activities in conformance with the Mineral Leasing Act, regulations, and the terms, conditions and stipulations of the Grant, the Agency Official of the Agency administering the Federal Lands involved is the Authorized Officer.

"Holder" means Mountain Valley Pipeline, LLC, its successors and assignees.

"Construction Segment" means a portion of the Pipeline System as agreed upon by the Holder and the Authorized Officer, which constitutes a complete physical entity or stage, in and of itself, which can be constructed independently of any other portion or stage of the pipeline in a designated area or between two given geographical points.

"Emergency Condition" means a Pipeline breach, damage to structures, equipment failure, an explosion, fire, natural disaster, and/or serious personal injury.

"Federal Lands" means all lands owned by the United States and included in this Grant.

"FERC Order" means the order issued by the Federal Energy Regulatory Commission (FERC) on October 13, 2017, granting a Certificate of Public Convenience and Necessity to Mountain Valley Pipeline, LLC for the Pipeline System.

"Gas" means a gaseous mixture, principally of methane and other paraffinic hydrocarbons suitably conditioned to an acceptable specification for transportation by the Pipeline.

"Grant" means any authorization or instrument BLM issues under section 28 of the Mineral Leasing Act, 30 U.S.C. 185, authorizing a nonpossessory, nonexclusive right to use Federal lands to construct, operate, maintain, or terminate a pipeline.

VAES 058143-04

"Hazardous Material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §§ 9601 *et seq.*, and its regulations; any hazardous waste as defined in the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. §§ 6901 *et seq.*, and its regulations; and any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 *et seq.* The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101(14), 42 U.S.C. § 9601(14), nor does the term include natural gas.

"Hazardous Waste" means oil or toxic or hazardous substances as defined by the Environmental Protection Agency, the Department of Transportation or as specified in writing by the Authorized Officer in consultation with the Environmental Protection Agency and the Department of Transportation's Authorized Officer during the review of the Holder's hazardous substances control, cleanup and disposal plan.

"In-Service Date" means the date when the continual flow of Gas begins through the Pipeline.

"Initial Operation" means operation during the one-year period beginning on the In-Service Date.

"Monitoring" means those actions, subject to 43 CFR 2886.11, the Federal government performs to ensure compliance with the terms, conditions, and stipulations of this Grant.

"Notice to Proceed" means written permission from the Authorized Officer to initiate Pipeline construction that is issued in accordance with 43 CFR 2886.10, or any subsequent written permission required by the terms, conditions, or stipulations of the ROW Grant.

"Notice to Proceed for Initial Pipeline Operations" means written permission from the Authorized Officer to commence operation of the Pipeline.

"Oil" means oil of any kind or any form, including but not limited to fuel oil, sludge, oil refuse, and oil mixed with Waste.

"Pipeline" means all parts of the MVP and related facilities crossing Federal lands through which the Gas moves.

"Pipeline System" means all facilities, whether or not located on Federal lands, used by the Holder in connection with the construction, operation, maintenance or termination of the Pipeline. It does not include facilities, such as urban administrative offices, which are only indirectly involved in the transportation of Gas; nor does it include facilities used by others in the production, gathering or conditioning of Gas.

"Plan of Development" means the Plan of Development that was approved and made part of the Grant (Exhibit E of the Grant), and any supplements, amendments, or revisions thereof.

"Programmatic Agreement" means the Programmatic Agreement entered into pursuant to Section 106 of the National Historic Preservation Act, dated December 14, 2017.

VAPS 058143-04

"Related Facilities" means those structures, devices, improvements, and sites on Federal Lands, other than the Pipeline, whose substantially continuous use is necessary for the operation and maintenance of the Pipeline. Related Facilities include, if applicable: supporting structures; access roads; compressor stations; valves and other control devices including hydraulic control structures; bridges, culverts and low-water crossings; monitoring and communication devices including structures housing them; retaining walls, berms, dikes, ditches, cuts and fills; structures and areas for storing supplies and equipment; cathodic protection devices; and other facilities of a similar nature together with related yards, fences and buildings.

"Revegetation" means the establishment of plant cover on disturbed lands through techniques including, but not limited to, seedbed preparation, seeding, planting, fertilizing, mulching, and watering.

"Right-of-Way" or **"ROW"** means the Federal lands BLM authorizes a holder to use or occupy under a grant.

"Roads" means existing roads located on Federal lands and/or under the jurisdiction of an Agency or roads approved for construction on Federal lands which are necessary for access to and from the ROW for construction, operation, maintenance or termination of the Grant.

"Spread" see definition of "Construction Segment".

"Waste" means all discarded matter other than construction spoils. It includes, but is not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

VAES-058143-04

EXHIBIT D
Mountain Valley Pipeline
Right-of-Way
Standard and Special Stipulations

1. APPLICABILITY

- a. These Stipulations shall apply to the design, construction, operation, maintenance, and termination of the Mountain Valley Pipeline. Unless clearly inapplicable, the requirements, responsibilities and prohibitions imposed upon the Holder by these Stipulations are also imposed upon the Holder's agents, employees, contractors, and subcontractors, at any level, and the employees of each of them.
- b. Nothing in these Stipulations shall be construed as applying to activities of the Holder that have no relation to the Mountain Valley Pipeline.
- c. Nothing in these Stipulations shall be construed to affect any right or cause of action that otherwise would be available to the Holder against any person. The United States and the Holder do not intend to create any rights under these Stipulations that may be enforced by third parties for their own benefit or for the benefit of others.

2. RESPONSIBILITIES

- a. Holder shall conduct all activities associated with the operation, maintenance, and termination of the Pipeline within the authorized limits of this Grant.
- b. Holder shall not increase the size of the pipeline to accommodate future needs nor transport a commodity other than natural gas in the pipeline.
- c. Holder shall ensure compliance with these Stipulations and implementing orders of the Authorized Officer or Agency Official. Failure or refusal of the Holder's agents, employees, contractors, subcontractors, at any level, or their employees to comply with these Stipulations shall be deemed to be the failure or refusal of the Holder.
- d. The Authorized Officer, or their designated representative, shall review this instrument at the end of the 10th year, at a minimum, and at regular intervals thereafter, not to exceed 10 years, provided, however, that this instrument may be reviewed at any time deemed necessary by the Authorized Officer in accordance with the regulations.
- e. Holder shall require its agents, employees, contractors and subcontractors to understand and include these Stipulations, as appropriate, in all contracts and subcontracts which are entered into by any of them, together with a provision that the other contracting party, together with its agents, employees, contractors and subcontractors, and the employees of each of them, shall likewise be bound to comply with these Stipulations.
- f. Prior to any ground disturbing activities, the Holder shall:
 - 1) File an affirmative statement with the Authorized Officer, certified by a senior Holder official, that all Holder personnel, environmental inspectors, and contractor personnel have been or

VAES-058143-04

will be trained in the implementation of these Stipulations and the environmental mitigation measures appropriate to their jobs.

- 2) Obtain a written statement from the Authorized Officer of all delegations of authority for administration of these stipulations; and
 - 3) Identify all landowners and parties with property interests on Federal Lands, and where the United States holds property interests on private lands, determine any and all adverse impacts to said parties which may be attributed to the construction, Initial Operation, maintenance, and termination of the Pipeline. The Holder shall procure negotiated settlements with the affected parties to the satisfaction of the Authorized Officer.
- g. Holder shall designate a representative who shall be empowered on behalf of the Holder to communicate with, and to receive and comply with all communications and orders of the Authorized Officer or Agency Official. The Holder shall also designate field representatives who shall be authorized to, and at all times be available to communicate and cooperate with, field representatives of the Authorized Officer or Agency Official. The Holder shall keep the Authorized Officer and Agency Official informed of any change of the Holder's representatives during the construction, operation, maintenance, and termination of the Mountain Valley Pipeline.
 - h. Upon written order from the Authorized Officer, the Holder shall furnish any or all data related to design, construction, operation, maintenance, and termination activities undertaken in connection with the Mountain Valley Pipeline, as may be reasonably relevant to the Authorized Officer's or Agency Official's responsibilities in Section 28 of the Mineral Leasing Act of 1920, (30 U.S.C. § 185) and the regulations in 43 CFR Part 2880; provided, however, that access to such documents is not prohibited or limited by law or regulation, and provided further that any such data furnished shall be subject to the provisions of the Freedom of Information Act, 5 U.S.C. § 552.
 - i. In accordance with the provisions of Section 28 of the Mineral Leasing Act of 1920 (30 U.S.C. § 185), prior to the issuance of a Notice to Proceed, the Authorized Officer may, by written order, require the Holder to make such modification to plans, designs, specifications, or other documents as deemed necessary to protect or maintain stability of foundation and other earth materials; protect or maintain integrity of the Mountain Valley Pipeline; control or prevent significant damage to the environment (including but not limited to fish and wildlife populations or their habitats); or remove hazards to public health and safety.
 - j. The absence of any comment by the Authorized Officer or Agency Official on any plan, design, specification, or other document which may be filed by the Holder with the Authorized Officer or Agency Official, shall not be deemed to represent in any way whatsoever any assent to, approval of, or concurrence in such plan, design, specification, or other document, or of any action proposed therein. Nevertheless, on any matter necessary or related to the construction and Initial Operation of the Pipeline System which requires action by the Authorized Officer or Agency Official there is an obligation to act expeditiously. Any written approval or instruction by the Authorized Officer or Agency Official may be relied upon by the Holder unless and until rescinded in writing. The Authorized Officer or Agency Official will act in writing upon each submission in accordance with the agreed-upon schedules developed pursuant to these Stipulations. Any disapproving action by the Authorized Officer or Agency Official, including any requests for additional information, shall state what additional action is necessary to gain approval.

VAES-058143-04

- k. The Authorized Officer and Agency Official shall have a continuing right of access to any part of the Federal Lands at any time for inspection or monitoring and for any other purpose or reason that is consistent with responsibilities under the Grant, Section 28 of the Mineral Leasing Act of 1920 (30 U.S.C. § 185), and the regulations in 43 CFR Part 2880. This right may be exercised by the Authorized Officer or Agency Official; or by contractors and subcontractors of the Authorized Officer or Agency Official performing work related to the Pipeline who are designated in writing. The Authorized Officer or Agency Official shall prepare procedures to implement this paragraph, including reasonable advance notification where practicable.
- l. No order or notice given to the Holder on behalf of the Authorized Officer or Agency Official shall be effective as to the Holder unless prior written notice of the delegation of authority to issue such order or notice has been given to the Holder by the Authorized Officer or Agency Official.
- m. In the implementation of these Stipulations, the Holder shall furnish all supervisory-level employees with copies of the Authorized Officer's and Agency Official's delegation(s) of authority and shall explain the limitations imposed therein.
- n. Holder shall be required to submit an SF-299, Application for Transportation and Utility Systems and Facilities on Federal Lands, for renewal of this Grant to the Authorized Officer at least 120 calendar days prior to the expiration date of this Grant. The Authorized Officer will review the application for renewal to ensure the Holder is complying with the terms, conditions, and stipulations of this Grant and applicable laws and regulations. If renewed, the right-of-way shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the Authorized Officer deems necessary to protect the public's interest.
- o. Holder shall pay monitoring fees in accordance with 43 CFR § 2885.24 for the actual costs incurred in the inspection and monitoring of construction, operation, maintenance, and decommissioning of the right-of-way.
- p. The Department of the Interior, Bureau of Land Management, Eastern States Director, unless otherwise delegated, is the Authorized Officer responsible for issuance of any Grant, Notice to Proceed, amendment, renewal, termination, variance, or bond determination.
- q. The U.S. Department of Agriculture, Forest Service, George Washington & Jefferson National Forests (GWJNF), Forest Supervisor, unless otherwise delegated, is the Authorized Officer responsible for regulating and monitoring activities under this instrument on Federal Lands under their jurisdiction in accordance with the terms and conditions of this Grant. In addition, the GWJNF, Forest Supervisor, or their delegate, is responsible for approving the Plan of Development including amendments thereof.

3. LIMITATIONS

- a. This Grant is limited to those portions of the right-of-way lying within lands owned by the United States and managed by the U.S. Department of Agriculture, Forest Service (USFS).
- b. Any proposed Pipeline System development and/or construction activity outside of the approved Grant area on Federal Lands shall be reviewed and approved by the USFS and the BLM prior to construction and prior to a Notice to Proceed being issued.
- c. Holder may assign, with prior written approval from BLM in concurrence with the USFS, this Grant to a third party. Assignment of the Grant shall be in accordance with 43 CFR § 2887.11.

VAES-058143-04

- d. This Grant is issued subject to valid existing rights in accordance with 43 CFR Part 2880. During the Holder's use of any lands authorized herein, such use shall be consistent with and not interfere with any prior valid existing rights of others over Federal Lands or roads. The BLM and USFS (collectively, Agencies) shall provide a listing, by case number, location, etc., of any rights that intersect or cover any authorized lands.

4. COMMUNICATIONS

- a. During the period of preconstruction, construction and Initial Operation of the Pipeline System, filing for and issuance of necessary permits and authorizations and requests for data related to such permits or authorization shall take place between the Holder and the Agency.
- b. Communications from the Holder to the Agency shall be transmitted to the Authorized Officer or Agency Official together with any documents required by statute or regulations to be filed with the Agency.
- c. Any written notice or communication, including any telegram, fax or e-mail, relating to any subject, addressed to the Authorized Officer or Agency Official from the Holder, shall be deemed to have been delivered to and received by the Authorized Officer or Agency Official when the notice or communication has been delivered either by messenger during normal business hours, or by means of registered or certified United States mail, postage prepaid, return receipt requested, or by other acceptable means of confirmation to the Authorized Officer or Agency Official.
- d. Any written order, notice, or other written communication, including any telegram, fax or e-mail, relating to any subject that is addressed to the Holder from the Authorized Officer or Agency Official shall be deemed to have been delivered to and received by the Holder when the order, notice or other communication has been delivered either by messenger during normal business hours, or by means of registered or certified United States mail, postage prepaid, return receipt requested to the office of the representative designated by the Holder pursuant to these Stipulations.
- e. All orders or approvals of the Authorized Officer or Agency Official shall be in writing, but in emergencies may be issued orally, with subsequent confirmation in writing as soon as possible thereafter, but not later than twenty-four (24) hours.

5. PLAN OF DEVELOPMENT

- a. During the life of the Grant, the Holder shall construct, operate, maintain, and terminate the facilities, improvements, and structures within the Federal Lands in strict conformity with the approved Plan of Development including updates thereof. Any relocation, additional construction, or use that is not in accordance with the approved Plan of Development shall not be initiated without the prior written approval of the Authorized Officer.
- b. The approved Plan of Development including the associated stipulations, plans, maps, or designs are incorporated into and made a part of this Grant as fully and effectively as if they were set forth herein in their entirety. This Grant shall be the controlling document if there are any conflicts between the stipulations, plans, maps, or designs included as Exhibits with this Grant and those included as part of the Plan of Development.
- c. The Holder shall ensure that all supervisory personnel working for the Holder on Federal Lands

VAES-058143-04

carry a copy of the complete Grant, including all stipulations, approved Plan of Development, and Notice to Proceed, during construction, operation, and termination. The supervisory personnel shall present the documents upon request to the Authorized Officer or Agency Official. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

6. The Authorized Officer or Agency Official may require and schedule a preconstruction conference with the Holder prior to the Holder's commencing construction and/or surface disturbing activities on the Federal Lands. The Holder and/or its representative shall attend this conference.
 - a. The Holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the Federal Lands, shall also attend this conference to review the stipulations of the Grant including the approved Plan of Development.
7. The Holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the Authorized Officer or Agency Official. The Holder's representative shall be available for communication with the Authorized Officer or Agency Official within a reasonable time when construction or other surface disturbing activities are underway.
8. The Authorized Officer or Agency Official may suspend or terminate in whole, or in part, any Notice to Proceed which has been issued when, in their judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
9. Any cultural and/or paleontological resource discovered by the Holder, or any person working on his behalf, on public or Federal Land shall be immediately reported to the Authorized Officer and Agency Official. The Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The Holder shall be responsible for the cost of evaluation, and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder.
10. Pursuant to 43 CFR 10.4(g), all persons associated with operations under this Grant must be informed that any objects or sites of cultural, paleontological, or scientific value such as historic or prehistoric resources, graves or grave markers, human remains, ruins, cabins, rock art, fossils, or artifacts shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with operations under this Grant any of the above resources are encountered, the Holder shall immediately suspend all activities, pursuant to 43 CFR 10.4(c) and (d), in the immediate vicinity of the discovery that might further disturb such material and notify the Authorized Officer of the findings. The discovery must be protected for 30 days until notified in writing by the Authorized Officer to proceed.
11. In the event that the Federal Lands, or a portion thereof, is conveyed out of Federal ownership and administration of the Federal Lands is not being reserved to the United States, and/or the Federal Lands are not located within a right-of-way corridor being reserved to the United States, the United States waives any right it has to administer the Grant within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part 2800 or 2880, including any rights to have the Holder apply to the Authorized Officer for amendments, modifications, or assignments and for the Authorized Officer to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the Grant for all Federal

VAES-058143-04

Lands being conveyed and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the Grant shall be considered a civil matter between the patentee/grantee and the Holder.

12. The Holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the Holder shall immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where General Land Office or BLM monuments or references are obliterated during operations, the Holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The Holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the BLM cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the Holder shall be responsible for the survey cost.
13. Uses of pesticides shall comply with the applicable Federal laws, and with state laws when not in conflict with Agency management authorities and objectives. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Agency. Prior to the use of pesticides, the Holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. The plan should be submitted no later than December 1 of any calendar year to cover the proposed activities for the next fiscal year. Emergency use of pesticides shall be approved in writing by the Authorized Officer prior to such use.

14. BOND AND BONDING

- a. Holder shall provide a bond in the amount of \$8,665,838 for the following items prior to issuance of a Notice to Proceed:
 - 1) Restoration and reclamation of disturbed areas and other requirements relative to the construction phase of the project until these have been accepted by the Authorized Officer. Other requirements include, but are not limited to, completion of all required reports, providing all essential records, and permanent curation of artifacts. Upon completion, or partial completion of these construction related requirements, the Authorized Officer may terminate or reduce the amount of the bond. Bonding amount for reclamation activities is \$3,909,838.
 - 2) All cultural resource costs associated with implementing the Programmatic Agreement, approved treatment plans, or other mitigation activities, as negotiated by the Holder for contracted services in support of the Programmatic Agreement. Such costs may include, but are not limited to treatment, field work, post-field analyses, research and report preparation, interim and summary report preparation, curation of project documentation and collected artifacts (except for Native American Graves Protection and Repatriation Act [NAGPRA] related human remains and cultural artifacts) in an Agency-approved curation facility, and costs associated with the repatriation of NAGPRA items. Bonding amount for cultural work is \$2,500,000.

VAES-058143-04

- 3) Implementing decommissioning activities, including physical disconnection; cleaning and purging; filling and sealing; pipeline removal; surface reclamation, and purchase of fill and reclamation materials. Bonding amount for decommission activities is \$1,256,000.
- 4) Liability for damages or injuries resulting from releases or discharges of Hazardous Materials or Hazardous Waste during the construction and reclamation phases of the project. Bonding amount for Hazardous Materials or Hazardous Waste liability is \$1,000,000.
- b. A performance bond, acceptable to the Authorized Officer, shall be furnished by the Holder in the amount of \$8,665,838. The Authorized Officer or their designee, shall review the bond at no less than 5-year increments. The bond amount may be periodically adjusted by the Authorized Officer or their designee when, in their sole determination, conditions warrant such a change. In addition, whenever requested by the Authorized Officer or their designee, the Holder shall furnish a report within 90 days estimating all costs which may be incurred by the Agencies to fulfill the terms and conditions of the grant in the event that the Holder was not able to do so. This estimate report shall be prepared by an independent State certified engineer who is approved in advance by the Authorized Officer or their designee and shall include such information including but not limited to administrative costs and Davis Bacon wages potentially incurred by the Agencies. The report shall detail the estimated costs and shall be accompanied by the engineer's seal. All costs of preparing and submitting this report shall be borne solely by the Holder. This report along with inflationary estimates shall be the basis of the bond and shall remain in effect until such time that the Authorized Officer or their designee determines that conditions warrant a review of the bond. Surface disturbing activities shall not commence until the Authorized Officer, or their designee, has accepted the bond and issued a notice to proceed.
- c. The portion of the bond addressing cultural resources shall be forfeited if any tasks required in the Programmatic Agreement are not completed within the time period established by the treatment option selected; provided, however, that the Authorized Officer and the Holder may agree to extend any such time periods. The Authorized Officer shall notify the Holder in writing that the surety (if one is used) is subject to forfeiture and shall allow the Holder 15 days to respond before action is taken to forfeit the surety.
- d. A portion of the bond may be retained for the life of the grant to ensure compliance with the Holder's continuing responsibilities under the provisions of the Grant including, but not limited to the following:
 - 1) Restoration and reclamation of disturbed areas
 - 2) Erosion and sediment control
 - 3) Noxious weed control
 - 4) Fire prevention and control
 - 5) Spill prevention and clean-up
 - 6) Groundwater and wetland monitoring
 - 7) Stormwater pollution prevention
 - 8) Termination/abandonment

VAES-058143-04

- e. The bond shall be released, in whole or in part, as specific tasks are completed and accepted by the Authorized Officer. This bond must be maintained in effect until removal of improvements and restoration of the right-of-way has been accepted by the Authorized Officer and all products required by the Programmatic Agreement have been accepted by the USFS.

15. INDEMNIFICATION

- a. In addition to the obligation imposed on the Holder by the provisions of 43 CFR § 2886.13, to the extent consistent with Sec. 28(x) of the Mineral Leasing Act of 1920, as amended, (30 U.S.C. § 185(x)), the Holder agrees to fully indemnify the United States for any and all costs or obligations incurred by the United States in performing any obligation of the Holder under this Grant.
 - b. The Holder agrees to indemnify, defend, and hold the United States harmless from any costs, damages, claims, causes of action, penalties, fines, liabilities, and judgments of any kind or nature arising from the past, present, and future acts or omissions of the United States, or its employees, agents, contractors, or lessees, or any third-party, arising out of, or in connection with, the Holder's use, occupancy, or operations of the Federal Lands. This indemnification and hold harmless agreement includes, but is not limited to, acts and omissions of the United States and its employees, agents, contractors, or lessees, or any third party, arising out of or in connection with the use of the Federal Lands which has already resulted or does hereafter result in: (1) Violations of federal, state, and local laws, and regulations that are now, or may in the future become, applicable to the real property; (2) judgments, claims, or demands of any kind incurred by the United States; (3) Costs, expenses, or damages of any kind incurred by the United States; (4) Other releases or threatened releases of solid or hazardous wastes and/or hazardous substance(s), as defined by federal or state environmental laws; off, on, into, or under land, property, and other interests of the United States; (5) Other activities by which solids or hazardous substances or wastes, as defined by federal and state environmental laws are generated, released, stored, used, or otherwise disposed on the Federal Lands, and any cleanup response, remedial action, or other actions related in any manner to said solid or hazardous substances or wastes; (6) or natural resource damages as defined by federal and state law. This covenant shall be construed as running with the Grant and may be enforced by the United States in a court of competent jurisdiction.
 - c. The Holder agrees to indemnify the United States against any liability arising from the release of any Hazardous Material or Hazardous Waste unless the release or threatened release is wholly unrelated to the Holder's activity. This agreement applies without regard to whether a release is caused by the Holder, its agent, or unrelated third parties.
 - d. As a condition of receiving the Grant, the Holder assumes liability for, and agrees to save, hold harmless, and indemnify the applicable United States of America, its agents, and employees from and against any and all liabilities, obligations, losses, damages, judgments (including without limitation penalties and fines), claims, actions, suits, costs, and expenses (including without limitation attorneys' fees and experts' fees) of any kind or nature whatsoever, and by whomsoever made, that in any way arise out of the Holder's acts or omissions, or the acts or omissions of its employees, or agents, or contractors, in association with any Emergency Condition including, without limitation, abatement and Remediation Plan implementation.
16. The Holder shall comply with all applicable federal, state, county, and municipal laws and regulations, existing or hereafter enacted or promulgated, with regard to any Hazardous Material that will be used, produced, transported, or stored on or within the Federal Lands, or used in the construction, operation, maintenance or termination of the Pipeline System or any of its facilities.

VAES-058143-04

The Holder is prohibited from discharging Oil or other pollutants on Federal Lands or into or upon waters on Federal Lands. The Holder shall give immediate notice of any such discharge to the Authorized Officer and such other federal and state officials as are required by law to be given such notice.

17. Within 60 days of completion, the Holder shall submit to the Authorized Officer as-built drawings and a certification of construction verifying that the Pipeline System has been constructed and tested in accordance with the design, plans, specifications, and applicable laws and regulations.

18. NOTICE TO PROCEED FOR INITIAL PIPELINE OPERATIONS.

- a. Holder shall not commence operation of the Pipeline until receipt of a written determination by the Authorized Officer that rehabilitation and restoration activities are proceeding satisfactorily. Prior to the In-Service Date, the Holder shall submit to the Authorized Officer the following:
 - 1) A copy of its written authorization from the FERC Director of Office of Energy Projects determining that the "pipeline and associated facilities have been constructed in accordance with Commission approval and applicable standards, can be expected to operate safely as designed, and the rehabilitation and restoration of areas disturbed by construction are proceeding satisfactorily."
 - b. After review of the written authorization from FERC and issuance of the written determination described above, a Notice to Proceed for Initial Pipeline Operations shall be issued by the Authorized Officer. The date of this Notice shall constitute the In-Service Date under this Grant. No Gas shall flow through the pipeline until this Notice is issued by the Authorized Officer. If the Notice to Proceed for Initial Pipeline Operations is issued prior to the expiration of the Temporary Use Permit (TUP), it shall apply to both the ROW Grant and the TUP.
 - c. Prior to the In-Service Date, the Holder must certify in writing to the Authorized Officer that the Pipeline System:
 - 1) Has been constructed and tested according to the terms of the Grant; and
 - 2) Is in compliance with all required plans, specifications, and Federal, state, and local laws and regulations.

19. OPERATIONS AND MAINTENANCE

- a. Affirmative Statement:

Within 30 days of the In-Service Date, the Holder shall provide to the Authorized Officer a copy of the "Affirmative Statement" required to be filed with the Secretary of FERC in which a senior company official has:

- 1) "Certified that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities shall be consistent with all applicable conditions; or
- 2) Identified which of the conditions of the FERC Order the Holder has complied with or will comply with. This statement shall also identify any areas affected by the Pipeline System where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance."

VAES-058143-04

b. Standards.

- 1) Operation and maintenance activities in connection with the Pipeline shall be conducted in accordance with the Plan of Development, as applicable and to provide maximum protection to the public and the environment. The Holder shall follow all applicable standards, and requirements administered by the U.S. Department of Transportation detailed in 49 CFR Parts 191 and 192, and any additional regulations and rules required by the U.S. Department of Transportation Pipeline and Hazardous Material Safety Administration.

c. Notifications for USFS Land:

- 1) Holder, or its representative, shall provide at least 14 days' notice to the Authorized Officer and Agency Official prior to beginning authorized activities on Federal Lands managed by USFS or accessing authorized USFS roads, unless the Authorized Officer approves less than 14 days.
 - a) Notice shall include: the type of activity to be conducted, when and where the work will take place, how the work area(s) will be accessed, and what types of equipment will be used.
- 2) Following review and approval for the work, a Notice to Proceed shall be provided by the Authorized Officer.
 - a) The Notice to Proceed shall include any pertinent restrictions or stipulations, including but not limited to current local wildfire hazard restrictions, road closures or damage, other on-going commercial use of facilities, local closures or limitations for wildlife, off-road vehicle use, permitted camp locations, and any other requirements or limitations determined to be necessary by the Authorized Officer and Agency Official.

Both the notice of the work from the Holder and the Notice to Proceed from the Authorized Officer may be written, electronic or verbal as best suited to the specific request and as agreed to by Holder and Authorized Officer. Notices by both Holder and Agency may bundle similar work activities over a specific period of time during which changes in the pertinent restrictions and stipulations are unlikely to change, as determined and approved by the Authorized Officer.

20. QUALITY ASSURANCE AND CONTROL.

- a. The Holder shall ensure that the applicable requirements of 49 CFR Part 192 and environmental and technical stipulations included in the FERC Order, or as otherwise modified by a subsequent approved variance to the FERC Order, are incorporated in the Final Design and shall be complied with throughout all phases of construction, operation, maintenance and termination of the Pipeline System. The Holder shall provide for inspection of Pipeline System construction on Federal Lands to ensure compliance with the approved design specifications.
- b. The Holder shall submit reports to the Authorized Officer to demonstrate that it is complying with the quality assurance and control requirements of 49 CFR Part 192 and the FERC Order and approved variances to the FERC Order. Such reports shall be submitted to the Authorized Officer on a quarterly basis unless otherwise requested by the Authorized Officer.

21. CONDUCT OF OPERATIONS.

- a. The Holder shall perform Pipeline operations in a safe and workmanlike manner so as to ensure

VAES-058143-04

protection of the environment, the health and safety of the public, and to avoid injury or damage to any person or property. The Holder shall at all times employ qualified personnel and maintain equipment sufficient to ensure the safety and integrity of the Pipeline and Related Facilities. The Holder shall notify the Authorized Officer and Agency Official of any condition, problem, malfunction, or other occurrence which in any way threatens the safety or integrity of the Pipeline, or significant harm to the environment. All work shall be done in conformance with all Federal, State, and local health and safety regulations and laws.

- b. Holder shall operate, maintain, and terminate the Pipeline in a manner that will avoid or minimize degradation of air, land, and water quality. The Holder shall comply with applicable air and water quality standards and laws and regulations relating to pollution control or prevention.
- c. No signs or advertising devices shall be placed on Federal Lands, except those posted or approved by the Authorized Officer.

22. PUBLIC AND PRIVATE IMPROVEMENTS.

- a. The Holder shall provide reasonable protection to existing public or private improvements or facilities on Federal Lands which may be adversely affected by its activities during operation, maintenance, and termination of the Pipeline. If it is determined that the Holder has caused damage to such public and private improvements or facilities, and if the owner of the improvement or facility so requires, then the Holder shall promptly repair, or reimburse the owner for reasonable costs in repairing the improvement or facility to a condition which is satisfactory to the owner but need not exceed its condition as it existed prior to said damage.
- b. When the Holder's activity in connection with the operation, maintenance or termination of the Pipeline breaks or destroys a natural barrier for livestock control on Federal Lands, the gap thus opened shall be immediately fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the Authorized Officer and fenced by the Holder as per instructions of the Authorized Officer.

23. FIRE PREVENTION AND SUPPRESSION.

- a. The Holder shall abide by applicable laws and regulations related to fire prevention and suppression. The Holder shall comply with the Fire Prevention and Suppression Plan (Exhibit C, Appendix X) and any additional measures to be used by the Holder and its contractors to ensure that fire prevention and suppression techniques are carried out in accordance with federal, state and local regulations. The Holder shall comply with applicable Commonwealth of Virginia or State of West Virginia administrative rules regarding the location, type and amount of fire prevention and suppression equipment available for use by the Holder and its contractors during the closed fire season or periods of fire danger. The Authorized Officer may require the Holder by written order to provide additional fire prevention or suppression measures at any time during the life of the Grant when conditions for fire are hazardous and special precautions are necessary.
- b. The Holder shall promptly notify the Authorized Officer of any fires on, or which may threaten any portion of, the Pipeline and shall take all measures necessary or appropriate for the prevention and suppression of fires in accordance with applicable law. The Holder shall comply with the instructions and directions of the Authorized Officer concerning the use, prevention and suppression of fires on Federal Lands.

VAES-058143-04

- c. Use of open fires in connection with construction, operation, maintenance and termination of the Pipeline is prohibited on Federal Lands. The Holder shall comply with the Fire Prevention and Suppression Plan (Exhibit E, Appendix X) if burning of excess forest slash generated from clearing or maintenance operations is required.

24. ELECTRONICALLY OPERATED DEVICES

a. Transmitting Equipment

- 1) All transmitters shall have protective devices (shields, filters, isolation components), designed into or externally installed, to prevent interference with other users. All transmitters shall meet FCC licensing requirements. Two-way transmitters should have dual section isolators for a total of 60 dB of isolation.
- 2) The re-radiation of intercepted signals from any unprotected transmitter and its associated antenna system will be prevented by the use of appropriate filters (wide band and narrow band broadcast transmitters).
- 3) The direct radiation of out-of-band emissions (i.e., noise or spurious harmonics) shall be reduced to a level such that they may not be identified as a source of interference as defined in the FCC Rules and Regulations (e.g., Part 90.209(e) for non-broadcast uses). If site noise (electromagnetic noise) becomes an issue, noise threshold limits shall be established, and amended into the site plan, prior to authorizing any new uses.
- 4) Direct radiation of out-of-bound emissions, (i.e., transmitter wide band noise, spurious emissions, harmonics, etc.) shall be reduced to a noninterference level by using bandpass, lowpass, and/or harmonic filtering. Where duplexing is used, use of a notch type device should be avoided.
- 5) Re-radiation of signals from a transmitter and its associated antenna system shall be prevented by installing appropriate devices (i.e., ferrite isolators), with minimum return loss of 25dB.
- 6) All transmitters not in immediate use and not specifically designated as standby equipment shall be removed. Loads connected to circulators are to be capable of dissipating the total power output of the transmitter.

b. Receiving Equipment

- 1) All receivers shall comply with all applicable parts of the FCC rules, including Parts 2 and 15.
- 2) All receivers shall have sufficient "front end" pre-selection to prevent receiver spurious response. The use of bandpass, band-reject cavity or crystal filters may be required to prevent receiver-produced intermodulation or adjacent-channel interference.
- 3) Where duplexing is used, a bandpass cavity duplexer is required. Use of the notch-type device is not permitted. Where notch-type devices are currently in place and there are no interference problems, their use may continue until the equipment is replaced, at which time they must be replaced with bandpass devices.

VAES-058143-04

25. TERMINATION OF ABANDONMENT OF AUTHORIZATIONS.

- a. The Holder shall submit a plan to the Authorized Officer not less than ninety (90) days in advance of termination or abandonment of the Pipeline which identifies a schedule and procedures, including restoration activities, for the removal or abandonment of Pipeline System from Federal Lands. Said plan shall include all Pipeline-related improvements and equipment unless otherwise directed in writing by the Authorized Officer. Procedures for abandonment of the Pipeline shall be in accordance with the requirements specified in 18 CFR 157.18, 49 CFR 192.727, and any additional instructions deemed necessary by the Authorized Officer to protect the environment and/or public health and safety.
- b. Abandonment of the Pipeline or noncompliance with any provision of Section 28 of the Mineral Leasing Act, as amended, or the Grant may be grounds for suspension or termination of the Grant if after due notice to the Holder, a reasonable opportunity to comply, and an appropriate administrative proceeding pursuant to 5 U.S.C. § 554, the Authorized Officer determines that such grounds exist and that suspension or termination is justified.
- c. If the Authorized Officer determines that an immediate temporary suspension of activities authorized under the Grant is necessary to protect public health or safety or the environment, such activities may be curtailed prior to an administrative proceeding.
- d. Deliberate failure of the Holder to use the Federal Lands for the purpose for which the Grant was granted or renewed for any continuous two-year period shall constitute a rebuttable presumption of abandonment: Provided, that where the failure to use the Federal Lands is due to circumstances not within the Holder's control the Authorized Officer is not required to commence proceedings to suspend or terminate the Grant.

26. AGENCY REQUEST FOR MODIFICATION.

- a. After the Initial Operation, the Authorized Officer may require the modification of conditions of the Grant and the design and implementation of any additional measures deemed necessary to assure continued compliance with the intent of any stipulations contained herein as well as the avoidance or mitigation of adverse environmental impact resulting from the operation, maintenance, and termination of the Pipeline. The Authorized Officer, in consultation with the Agency Official as appropriate, shall determine what type of authorization or permit the Holder will be required to seek.

27. ZONES OF RESTRICTED ACTIVITIES.

- a. The Holder's activities in connection with operation, maintenance, and termination of the Pipeline System on Federal Lands in key fish and wildlife areas and in specific areas where threatened or endangered species of plants or animals are found may be restricted by the Authorized Officer during periods of fish and wildlife breeding, nesting, spawning, lambing and calving activity, over wintering, and during major migrations of fish and wildlife or when necessary to insure that such activity will not jeopardize the continued existence of an endangered or threatened species, or modify or destroy its critical habitat.
- b. The Authorized Officer shall provide the Holder written notice of such restrictive action. At least annually, and as far in advance of such restrictions as is possible, the Authorized Officer shall furnish the Holder an updated list of areas where such actions may be required together with

VADS-058143-04

anticipated dates of restriction. The Holder shall adhere to the Construction March Chart (Exhibit F).

- c. There shall be no surface disturbance between the bore pits on Peters Mountain and no vehicles or heavy equipment shall cross at grade between the bore pits. There shall be no physical disturbance of the Appalachian National Scenic Trail between the bore pits.=

28. REPORTING, PREVENTION, CONTROL, CLEANUP, AND DISPOSAL OF OIL AND HAZARDOUS SUBSTANCES DISCHARGES.

- a. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated, as well as the provisions in the Plan of Development Spill, Prevention, Control, and Countermeasure Plans and Unanticipated Discovery of Contamination Plan (Exhibit E, Appendix D). In any event, the Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 U.S.C. § 2601 et seq., with regards to any toxic substances that are used, generated by, or stored on the Federal Lands. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR §§ 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by CERCLA Section 102(b), 42 U.S.C. § 9602(b). A copy of any report required or requested by any Federal or State agency as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal or State agency.
- b. If, during any phase of the operation, maintenance, or termination of the Pipeline, any Oil or other pollutant should be discharged, impacting Federal Lands, the control and total removal, disposal, and cleaning up of such Oil or other pollutant, wherever found, shall be the responsibility of the Holder, regardless of fault. Upon failure of the Holder to control, dispose of, or clean up such discharge on or affecting Federal Lands, or to repair all damages to Federal Lands resulting there from, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the Holder. Such action by the Authorized Officer shall not relieve the Holder of any liability or responsibility.

29. TECHNICAL-GENERAL PIPELINE SYSTEM STANDARDS.

- a. All operation, maintenance, and termination practices employed with respect to the Pipeline System shall be in accordance with sound engineering practice and, with regard to the Pipeline, shall meet or exceed the Department of Transportation regulations, 49 CFR Parts 191, "Reports of Leaks," and 192, "Transportation of Natural and Other Gas by Pipelines: Minimum Federal Safety Standards".

30. SLOPE STABILITY.

- a. The Holder shall design the Pipeline System to provide measures, based on such detailed field investigations and analysis as may be necessary, so as not to contribute to the occurrence of, and to protect the Pipeline System against the effects of mass movement (Exhibit E, Appendices C and F).
- b. Should a landslide or other erosion event occur on Federal Lands as a result of the construction, operation, maintenance or termination of the Pipeline, the Holder shall take the following actions:

VALES-058143-04

- 1) The Holder shall immediately notify and consult with the Authorized Officer in accordance with the Emergency Response Plans (Exhibit E, Appendices Q and R) as required under these stipulations.
 - 2) The Holder shall develop site-specific plans for remediation of any such event in consultation with, and for approval by, the Authorized Officer. The site-specific plans shall be based on pipeline safety issues and the need to return the pipeline to service while mitigating and mediating effects to Federal facilities, infrastructure and resources.
 - 3) Prior to initiating any ground- or habitat-disturbing activities for remediation of an event, the Holder shall conduct or fund an environmental analysis including, but not limited to, scoping, site-specific resource analyses, and cumulative effects analyses, sufficient to meet the criteria set forth by Agency regulations in existence at the time the remediation activities are initiated. The Holder may refer to or rely on any previous environmental analysis to the extent such analysis is approved by the Agency. Any contractors selected by the Holder to conduct the necessary environmental analysis shall be approved by the Authorized Officer.
- c. The Holder shall be subject to payment of cost recovery fees for Agency expenses incurred in the consultation, planning, and design reviews associated with the landslide or erosion event.

31. EMERGENCY CONDITIONS.

- a. When necessary to respond to an Emergency Condition, the Holder may, at any time and without prior authorization, enter onto the Federal Lands in order to take actions necessary to abate an Emergency Condition.
- b. The Holder must use best efforts to immediately notify the Authorized Officer of an Emergency Condition, its location (e.g., GPS or pipeline milepost), any emergency repairs or response actions proposed or undertaken, and other relevant information. The Holder must contact the Authorized Officer identified in the Holder's Construction Emergency Preparedness and Response Plan (Exhibit E, Appendix Q) and Operations, Maintenance, and Emergency Response Plan (Exhibit E, Appendix R). The Holder must annually request updated contact information from each Authorized Officer and update the contact tables in the Holder's Emergency Plan and Preparedness and Public Safety Response Manuals and the Emergency Response Plan, accordingly.
- b. Consistent with Holder's Construction Emergency Preparedness and Response Plan (Appendix Q of the Plan of Development), as that Plan may be amended from time-to-time, the Holder shall conduct a root cause analysis of Emergency Conditions. Unless otherwise agreed to by the Authorized Officer in writing, the analysis must be completed within 10 business days of the end of the Emergency Condition. The root cause analysis must be provided to the Authorized Officer.
- c. In consultation with the affected Agency, the Holder shall develop a site-specific plan (Remediation Plan) addressing remediation of both the conditions that led to the Emergency Condition and any damage resulting from the Emergency Condition. Where a damaged Agency resource cannot be remediated, the Remediation Plan shall include appropriate mitigation compensating the Agency for damages resulting from the emergency. The Remediation Plan shall be submitted to the Authorized Officer for review and written approval within 30 business days after abatement of the Emergency Condition, unless another completion date is agreed to in writing. The Remediation Plan will be evaluated by the Authorized Officer in compliance with

VABS-058143-04

applicable law and Government policies including, without limitation, the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Clean Water Act (CWA), and applicable Agency land and resource management plans. The Remediation Plan may be accepted, rejected, or accepted with conditions by the Authorized Officer.

- d. After consultation with the affected Agency, the Authorized Officer may authorize the Holder to implement all or a portion of the Remediation Plan. Where the Authorized Officer provides such approval, a Special Use Permit or other written approval that meets the needs of the affected Agency will be provided to the Holder. Alternatively, the Authorized Officer and the affected Agency may decide that the affected Agency will undertake, or will contract to undertake, all or a portion of the remediation work.
- e. The Holder shall be solely responsible for all costs resulting directly or indirectly from any Emergency Condition. This obligation includes, without limitation, remediation and or compensatory mitigation, and the cost of environmental compliance (e.g., NEPA, ESA and CWA compliance). The Holder must promptly pay all costs in advance, unless otherwise agreed to in writing by the Authorized Officer.

32. COMPLIANCE WITH EXISTING LAWS.

- a. During the life of this Grant, to the extent practicable, the Holder shall comply with all existing and subsequently enacted, issued, or amended Federal laws and regulations, and state laws and regulations applicable to the authorized use. If requested, the Holder shall provide to the Agency copies of applicable permits from other agencies.
33. The Holder must obtain all Clean Water Act Section 401 water quality certifications or waivers that will be required for the Project prior to commencing any activity on Federal Lands that may result in any discharge into navigable waters. The Holder must strictly comply with any limitations and monitoring requirements set forth in any such certification, which shall become conditions on the Grant. In accordance with 43 CFR §§ 2886.11 and 2886.17, the Grant shall terminate if any of the limitations and monitoring requirements set forth in the certification(s) is not met.

34. RIGHT OF THE UNITED STATES TO PERFORM

- a. If after thirty (30) days, or in an emergency such shorter period as shall not be unreasonable, following the making of a demand therefore by the Authorized Officer or their designee, the Holder (or its agents, employees, contractors or subcontractors, at any level) shall fail or refuse to perform any of the actions required by the provisions listed in this Grant and the stipulations in attached Exhibits, the United States shall have the right, but not the obligation, to perform any or all of such actions at the sole expense of the Holder.

35. SPECIAL STIPULATIONS APPLICABLE TO LANDS ADMINISTERED BY THE GEORGE WASHINGTON & JEFFERSON NATIONAL FORESTS

The following stipulations must be met as conditions of the Grant and TUP to allow construction of the Pipeline upon the lands under the jurisdiction of the George Washington & Jefferson National Forests (GWJNF) and to ensure conformance with Agency standards:

- a. Holder shall comply with the Grant and TUP as approved by the BLM.

VAES-058143-04

- b. Holder must ensure that the Plan of Development (POD) is consistent with National Core Best Management Practices Technical Guide (FS-990a, April 2012¹).
- c. Holder must implement the construction procedures and mitigation measures that are applicable to National Forest System (NFS) lands as disclosed in the POD and updates thereof which have been approved by the USFS. Any requests made by the company for activities not included in the approved POD or that fall outside of the ROW must be requested to the Federal Energy Regulatory Commission (FERC) as a variance, with concurrence from the USFS and/or BLM as a variance. Additional environmental analysis may be required as part of the NEPA and National Forest Management Act (NFMA). Any variances must be approved prior to the activity taking place (Exhibit E, Appendix N [MVP 2023]).
- d. If construction conditions require, Holder must adhere to the stream crossing contingency measures outlined in the 2021 FERC Boring Environmental Assessment when boring under the four streams on NFS lands.
- e. Holder shall comply with applicable provisions of Appendix C – Environmental Conditions of the FERC Order Issuing Certificates and Granting Abandonment Authority; Docket Nos. CP16-10-000 and CP16-13-000 (issued October 13, 2017) and Order Granting Requests for Extension of Time (issued August 23, 2022); Dockets CP19-477-001, CP16-10-009, and CP21-57-001.
- f. Holder shall obtain all State water permits and certifications applicable to NFS lands, before beginning activity on NFS lands, and must remain in compliance with Erosion and Sediment Controls Plans, as listed below:
 - 1) Before beginning construction, the Holder shall obtain and comply with required approvals/certifications for necessary Stormwater Permits from the Virginia Department of Environmental Quality and the West Virginia Department of Environmental Protection.
 - 2) During and after construction on NFS land, the Holder shall comply with the associated Erosion and Sediment Control Plan as approved by the Virginia Department of Environmental Quality and by the West Virginia Department of Environmental Protection.
- g. Holder shall comply with the applicable Reasonable and Prudent Measures, and Terms and Conditions of the February 28, 2023, U.S. Fish and Wildlife Service (USFWS) Biological Opinion for the Mountain Valley Pipeline Project. Holder shall also implement applicable mitigation measures recommended by USFWS through any future Section 7(a)(4) Endangered Species Act (ESA) conferencing for future species that may occur. If species are listed as threatened or endangered under the ESA, any Reasonable and Prudent Measures and Terms and Conditions identified in a Supplemental Biological Opinion conducted under ESA 7(a)(2), must be implemented by the Holder.
- h. Holder is not authorized to use NFS roads for activities associated with this Pipeline, except where the Limit of Disturbance (LOD) is coincident with Mystery Ridge Road and with Brush Mountain Road.
- i. Holder is not authorized to undertake activities related to construction on NFS lands until the company has obtained all Federal and State authorizations outstanding for the entire project. Changes to approved mitigation measures, construction procedures, and construction work

¹ https://www.fs.usda.gov/naturalresources/watershed/pubs/FS_National_Core_BMPs_April2012.pdf

VAES-058143-04

areas due to unforeseen or unavoidable site conditions will require regulatory approval from the applicable land management agencies.

- j. The Holder shall implement the Revised Historic Property Treatment Plan for the Appalachian National Scenic Trail (ANST) as outlined in the FERC's Programmatic Agreement (docket #CP16-10-000) and the POD's ANST Contingency Plan.
- k. Holder shall not begin activities with the potential to adversely impact historic properties on NFS lands until the conditions below are satisfied:
 - 1) A Programmatic Agreement has been executed to satisfy consultation requirements of the National Historic Preservation Act, and
 - 2) The archaeological excavations for site 44GS0241, as outlined in the cultural resource treatment plan with an agreement on the use of Eastern Band of Cherokee Indians and Cherokee Nation of Oklahoma monitors, have been completed.

EXHIBIT E
RIGHT-OF-WAY
VAES-058143-04

Plan of Development
Mountain Valley Pipeline Project

Prepared by:



May 10, 2023



TABLE OF CONTENTS

1.0 Purpose and Need	1-1
1.1 Project Overview	1-1
1.2 Project Purpose	1-11
1.3 Dimensions of the Right-of-Way and Related Facilities on Federal Lands	1-11
1.4 Existing Rights-of-Way	1-12
1.5 Alternative Routes or Locations	1-13
2.0 Right-of-Way Location	2-1
2.1 Legal Description	2-1
2.2 Site-Specific Engineering Surveys for Critical Areas	2-2
2.3 Acre Calculation of the Right-of-way by Land Status.....	2-3
3.0 Facility Design Factors	3-1
4.0 Additional Components of the Right-of-Way	4-1
5.0 Government Agencies Involved.....	5-1
6.0 Construction of the Facilities	6-1
6.1 Construction	6-1
6.1.1 Standard Construction and Restoration Techniques	6-4
6.1.1.1 Surveying and Staking.....	6-5
6.1.1.2 Clearing and Grading.....	6-5
6.1.1.3 Trenching.....	6-7
6.1.1.4 Pipe Assembly	6-7
6.1.1.5 Hydrostatic Test and Final Tie-In.....	6-9
6.1.1.6 Cleanup and Restoration	6-10
6.1.1.7 Construction in Rugged Terrain.....	6-10
6.1.1.8 Wetland and Waterbody Pipeline Construction	6-13
6.1.1.9 Typical Road Crossings.....	6-16
6.1.1.10 Trail Crossings	6-16
6.1.1.11 Typical Topsoil Segregation	6-16
6.1.2 Special Construction Procedures	6-17
6.1.2.1 Blasting	6-17
6.1.2.2 Stove-Pipe Construction	6-19
6.1.2.3 Karst Area.....	6-19
6.1.2.4 Trench and Bore Pit Dewatering.....	6-19
6.1.2.5 Winter Construction	6-20
6.2 Work Force	6-21
6.3 Communication Procedures and Notification Protocols	6-21
6.4 Roles and Responsibilities	6-21
6.4.1 Federal Energy Regulatory Commission	6-22
6.4.2 U.S. Forest Service and U.S. Army Corps of Engineers	6-22
6.4.3 Compliance Inspection Contractor.....	6-23
6.4.4 Mountain Valley Pipeline	6-24
6.4.5 Construction Contractor.....	6-24
6.4.6 Environmental Inspection	6-24
6.5 Access to and Along Right-of-Way during Construction	6-26
6.5.1 Road Closures	6-27



*Plan of Development
Mountain Valley Pipeline Project*

6.6 Contingency Planning	6-27
6.7 Safety Requirements.....	6-27
7.0 Resource Values and Environmental Concerns.....	7-1
7.1 Soils and Vegetation	7-1
7.2 Exotic and Invasive Species Control.....	7-2
7.3 Water Quality	7-2
7.3.1 Stormwater Pollution Prevention	7-2
7.3.2 Spill Prevention, Containment, and Countermeasures	7-2
7.3.3 Impact Avoidance and Minimization	7-2
7.4 Plant and Wildlife Conservation	7-3
7.5 Health and Safety	7-4
7.5.1 Blasting	7-4
7.5.2 Fugitive Dust Control	7-4
7.5.3 Fire Prevention and Suppression	7-5
7.5.4 Hazardous Materials Management.....	7-5
7.5.5 Construction Emergency Preparedness and Response	7-5
7.5.6 Operations, Maintenance, and Emergency Response	7-5
7.5.7 Flagging, Fencing, and Signage.....	7-5
7.6 Cultural and Historic Resources	7-6
7.7 Unanticipated Discovery of Paleontological Resources.....	7-6
7.8 Off-Highway Vehicle Control and Access	7-6
7.9 Scenery Mitigation.....	7-6
8.0 Stabilization and Rehabilitation	8-1
8.1 Restoration (Soil Replacement and Stabilization).....	8-1
8.2 Disposal of Vegetation Removed During Construction.....	8-2
8.3 Seeding Specifications	8-2
8.4 Fertilizer	8-3
8.5 Limiting Access to the ROW and Law Enforcement	8-3
8.6 Access Road Reclamation	8-3
9.0 Operation and Maintenance	9-1
9.1 Access Needed for Operation and Maintenance	9-2
9.2 Hydrostatic Testing During Operation	9-2
9.3 Removal or Addition of Infrastructure during Pipeline Maintenance	9-3
9.4 Safety	9-3
9.5 Industrial Wastes and Toxic Substances Generation or Storage on ROW.....	9-3
9.6 Inspection and Maintenance Schedules	9-3
9.7 Work Schedules	9-3
9.8 Fire Control	9-3
9.9 Contingency Planning	9-4
10.0 Termination and Restoration.....	10-1
10.1 Removal of Structures	10-1
10.2 Obliteration of Roads	10-1
10.3 Stabilization and Revegetation of Disturbed Areas.....	10-1
11.0 References	11-1



LIST OF APPENDICES

- Appendix A Map
- Appendix A-1 Alignment Sheets
- Appendix A-2 Bore Profiles for Weston and Gauley Turnpike and Appalachian National Scenic Trail
- Appendix A-3 Topographic Maps
- Appendix A-4 Exhibit Maps
- Appendix B Details Appendix
- Appendix C Erosion and Sedimentation Control
 - Appendix C-1 West Virginia Erosion and Sedimentation Control Plan
 - Appendix C-2 Virginia Erosion and Sedimentation Control Plan
 - Appendix C-3 Erosion and Sedimentation Control Sheets
- Appendix D Spill, Prevention, Control and Countermeasure (SPCC) Plans and Unanticipated Discovery of Contamination Plans
 - Appendix D-1 SPCC Plan and Unanticipated Discovery of Contamination Plan for Construction Activities in West Virginia
 - Appendix D-2 SPCC Plan and Unanticipated Discovery of Contamination Plan for Construction Activities in Virginia
- Appendix E Conventional Bore Contingency Plan for the Proposed Crossing of the Appalachian National Scenic Trail
- Appendix F Landslide Mitigation Plan
- Appendix G Site Specific Design of Stabilization Measures in Selected High Hazard Portions of the Route of the Proposed Mountain Valley Pipeline Project in the Jefferson National Forest
- Appendix H Restoration Plan
- Appendix I Timber Removal Plan for the Jefferson National Forest
- Appendix J General Blasting Plan for Jefferson National Forest
- Appendix K Water Crossing Plans
- Appendix L Karst Mitigation Plan
- Appendix M Winter Construction Plan
- Appendix N Environmental Compliance Management Plan
- Appendix O Plan for Unanticipated Historic Properties and Human Remains for West Virginia and Virginia
- Appendix P Plan for Unanticipated Discovery of Paleontological Resources
- Appendix Q Framework Construction Emergency Preparedness and Response Plan
- Appendix R Framework for Operations, Maintenance, and Emergency Response Plan
- Appendix S Exotic and Invasive Species Control Plan
- Appendix T Herbicide Usage Plan
- Appendix U Stormwater Pollution Prevention Plan
- Appendix V Plant and Wildlife Conservation Measures Plan



- Appendix W Fugitive Dust Control Plan
- Appendix X Fire Prevention and Suppression Plan
- Appendix Y Hazardous Materials Management Plan
- Appendix Z Flagging, Fencing, and Signage Plan
- Appendix AA Off-Highway Vehicle Management Plan



LIST OF TABLES

Table 1-1. Land Requirements for the Mountain Valley Pipeline Project on Federal Land	1-12
Table 1-2. Existing Corridors Adjacent to the Proposed Project.....	1-13
Table 2-1. Legal Description of the Federal Lands on the JNF and USACE-Managed Lands	2-1
Table 2-2. Acre Calculation of the Project Facilities (Access Road, Work Spaces, and the ROW) by Land Status Management Prescription Area.....	2-3
Table 3-1. Pipe Specifications.....	3-1
Table 5-1. Agencies with Relevant Permit or Consultation Requirements	5-1
Table 6-1. Pipeline Construction Spreads within the JNF and at the Weston and Gauley Turnpike Crossing	6-5
Table 6-2. Waterbody Impacts within the JNF	6-15
Table 6-3. Bedrock Rippability and Possible Extent of Blasting on JNF.....	6-17
Table 6-4. Relationship of Roles and Responsibilities of Various Parties	6-26
Table 7-1 Time of Year Restrictions on Jefferson National Forest lands crossed by the Mountain Valley Pipeline	7-4
Table 9-1. Inspection Schedule for Major Components of the Project	9-2

LIST OF FIGURES

Figure 1-1.Project Overview.....	1-3
Figure 1-2.Proposed Route in the JNF	1-4
Figure 1-3.Pipeline Route for the Weston and Gauley Turnpike Crossing	1-5
Figure 1-4.Project Completion Status - Weston and Gauley Turnpike Crossing	1-6
Figure 1-5.Project Completion Status – Jefferson National Forest Crossing.....	1-7
Figure 6-1.Typical Pipeline Construction Sequence.....	6-3
Figure 6-2.Stove-Pipe Construction	6-11
Figure 7-1.Typical ROW Clearing Pattern for Vegetation Feathering Technique.....	7-8
Figure 7-2.Concept for Revegetation of the Right-of-Way.....	7-9



ACRONYMS AND ABBREVIATIONS

ANST	Appalachian National Scenic Trail
API	American Petroleum Institute
ATWS	additional temporary workspace
Bcf/d	billion cubic feet per day
BLM	U.S. Department of the Interior, Bureau of Land Management
BMP	best management practice
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CIC	Compliance Inspection Contractor
E&SCP	Erosion and Sediment Control Plan
ECM	erosion control matting
EIA	Energy Information Administration
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FS	U.S. Department of Agriculture, Forest Service
JNF	Jefferson National Forest ¹
LDC	Local Distribution Companies
MP	milepost
MVP	Mountain Valley Pipeline, LLC
NFS	National Forest System
NPDES	National Pollutant Discharge Elimination System
NSF	National Science Foundation
OHV	off-highway vehicle ²
PHMSA	U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration
Plan	FERC's May 2013 version of the Upland Erosion Control, Revegetation, and Maintenance Plan
POD	Plan of Development
Procedures	FERC's May 2013 version of the Wetland and Waterbody Construction and Mitigation Procedures
Project	Mountain Valley Pipeline Project
ROW	right-of-way
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasure
SSEAP	Site-Specific Emergency Action Plan

¹ Jefferson National Forest refers to the southern portion of the current George Washington & Jefferson National Forests throughout this document. Originally two separate national forests, the JNF and the George Washington National Forest were administratively combined in 1995 and are administered as a single national forest unit.

² OHV in this document refers generally to all types of motorized off-highway vehicles, including both street-legal and non-street-legal full-size vehicles, motorcycles, all-terrain vehicles, utility terrain vehicles, etc.



Plan of Development
Mountain Valley Pipeline Project

Tcf	trillion cubic feet
Transco	Transcontinental Gas Pipe Line Company, LLC
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
VDEQ	Virginia Department of Environmental Quality
WVDEP	West Virginia Department of Environmental Protection



1.0 PURPOSE AND NEED

1.1 Project Overview

Mountain Valley Pipeline, LLC (MVP or Mountain Valley), a joint venture between EQM Midstream Partners, LP; NextEra Capital Holdings, Inc.; Con Edison Gas Midstream LLC; WGL Midstream; and RGC Midstream, LLC, was issued a Certificate of Public Convenience and Necessity (Certificate) from the Federal Energy Regulatory Commission (FERC) on October 13, 2018, pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the Mountain Valley Pipeline Project (Project) located in 17 counties in West Virginia and Virginia. The Project is an approximately 303-mile, 42-inch-diameter natural gas pipeline. Per the definitions of 49 Code of Federal Regulations (CFR) § 192.3, the pipeline is considered to be a transmission line, which is also referred to as a trunk line.

The pipeline extends from the existing Equitans, L.P. transmission system and other natural gas facilities in Wetzel County, West Virginia to Transcontinental Gas Pipe Line Company, LLC's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project includes approximately 171,600 horsepower of compression at three compressor stations along the route, as well as measurement, regulation, and other ancillary facilities required for the safe and reliable operation of the pipeline.

A 3.5-mile-long segment of the Project crosses portions of the Jefferson National Forest (JNF) in Monroe County in southern West Virginia and in Giles, Craig, and Montgomery counties in southwestern Virginia. The JNF is managed by the U.S. Forest Service (FS) within the U.S. Department of Agriculture. Another 60-foot-long segment of the Project crosses the Weston and Gauley Bridge Turnpike Trail (Weston and Gauley Turnpike) in Braxton County, West Virginia, which is a historic, unpaved trail administered by the U.S. Army Corps of Engineers (USACE). Under the Mineral Leasing Act, approval to cross land managed by two or more federal agencies is the responsibility of the U.S. Department of the Interior, Bureau of Land Management (BLM) through issuance of a Right-of-Way Grant. Construction of the Project segment that crosses the Weston and Gauley Turnpike was completed in 2018. Construction of the Project segments across the JNF began in 2018 but were not completed and progress is on hold due to a July 27, 2018, order by the U.S. Court of Appeals for the Fourth Circuit³ vacating and remanding the Right-of-Way Grant and a subsequent Stop Work Order issued by FERC. BLM and USFS reissued RODs for the Project to cross the JNF in January 2021. In January 2022, the Fourth Circuit⁴ again vacated certain approvals pertinent to the Project's use of JNF lands.

The general location of the Project and location relative to federal lands crossed is shown on Figures 1-1 through 1-3. Project completion status at the crossings of the Weston and Gauley Turnpike and JNF is shown on Figures 1-4 and 1-5.

The pipeline will be buried at a minimum depth of three feet, per the requirements of the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, 49 CFR Part 192. There will not be any aboveground appurtenances

³ Sierra Club, Inc. v. United States Forest Services, 897 F.3d 582 (2018)

⁴ Sierra Club, Inc. v. United States Forest Service, Order 21-1039 (2022)



*Plan of Development
Mountain Valley Pipeline Project*

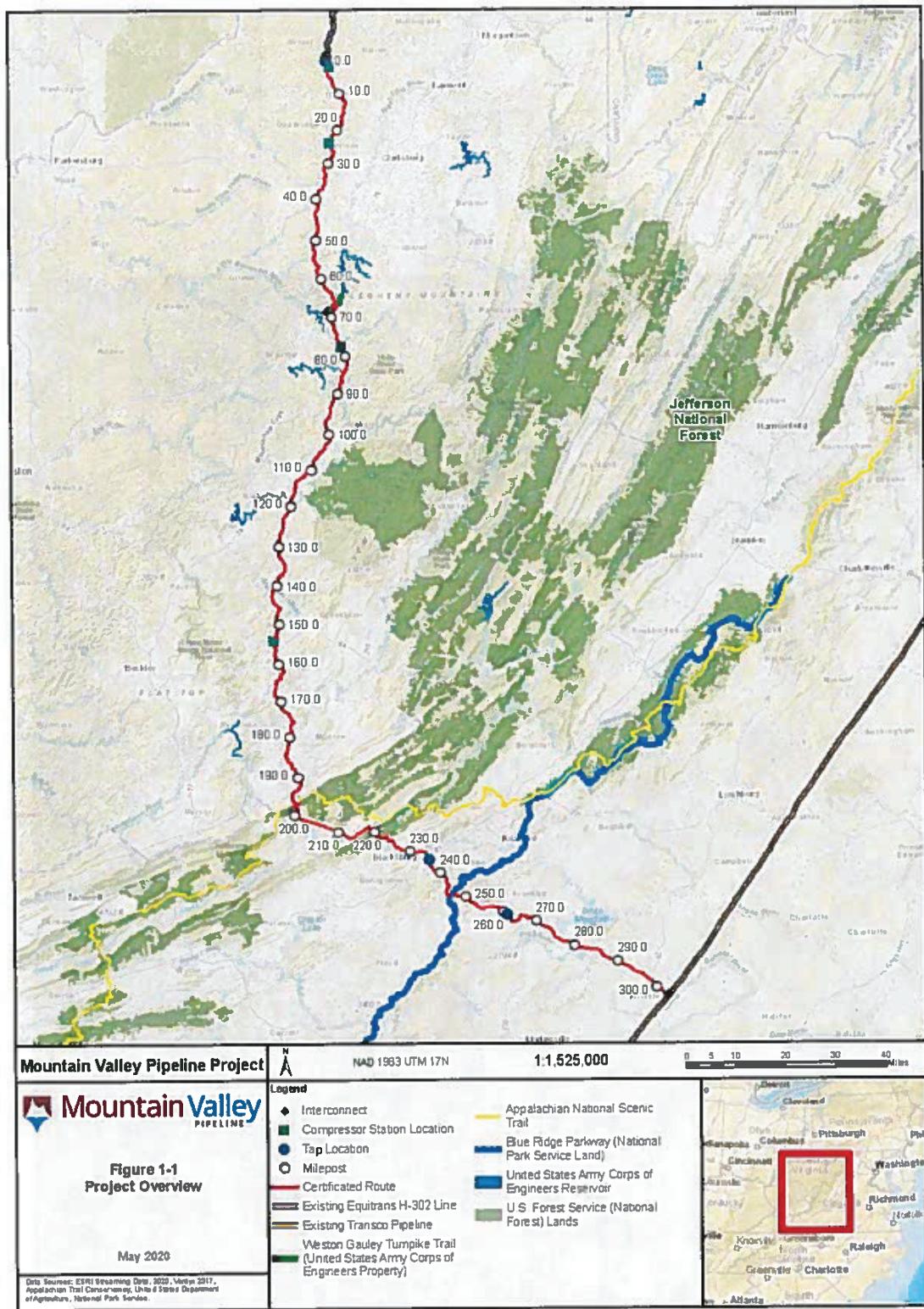
within the JNF or USACE property such as compressor stations, measuring stations, valve settings, rectifiers/anode beds, etc. However, there will be minor appurtenances within the JNF that include test stations and line markers, which will be entirely contained within the 50-foot operational right-of-way (ROW) as required by PHMSA's regulations.

This 2023 Plan of Development (POD) replaces all of the previous versions of the POD that have been submitted to date and outlines the steps that must be followed during construction and operation of the Project on federal lands. This POD is an iterative document that will evolve throughout the design and implementation process. All versions of the POD, appendices to the POD, and supporting documents will contain the date of issuance on each page. Since the Fourth Circuit's remand to the U.S. Forest Service referenced above, this POD has been updated to reflect the Fourth Circuit's remand. To that end, language throughout this POD includes both past, present and future verb tenses, to reflect work that has been done to date, work that is underway and work that remains to be done.

An electronic index of current appendices and supporting documents will be kept up to date by MVP and housed on the Project web site (<https://www.mountainvalleypipeline.info/news-info>). It is the responsibility of all involved personnel from all parties to ensure that they are utilizing the current version of all documents.

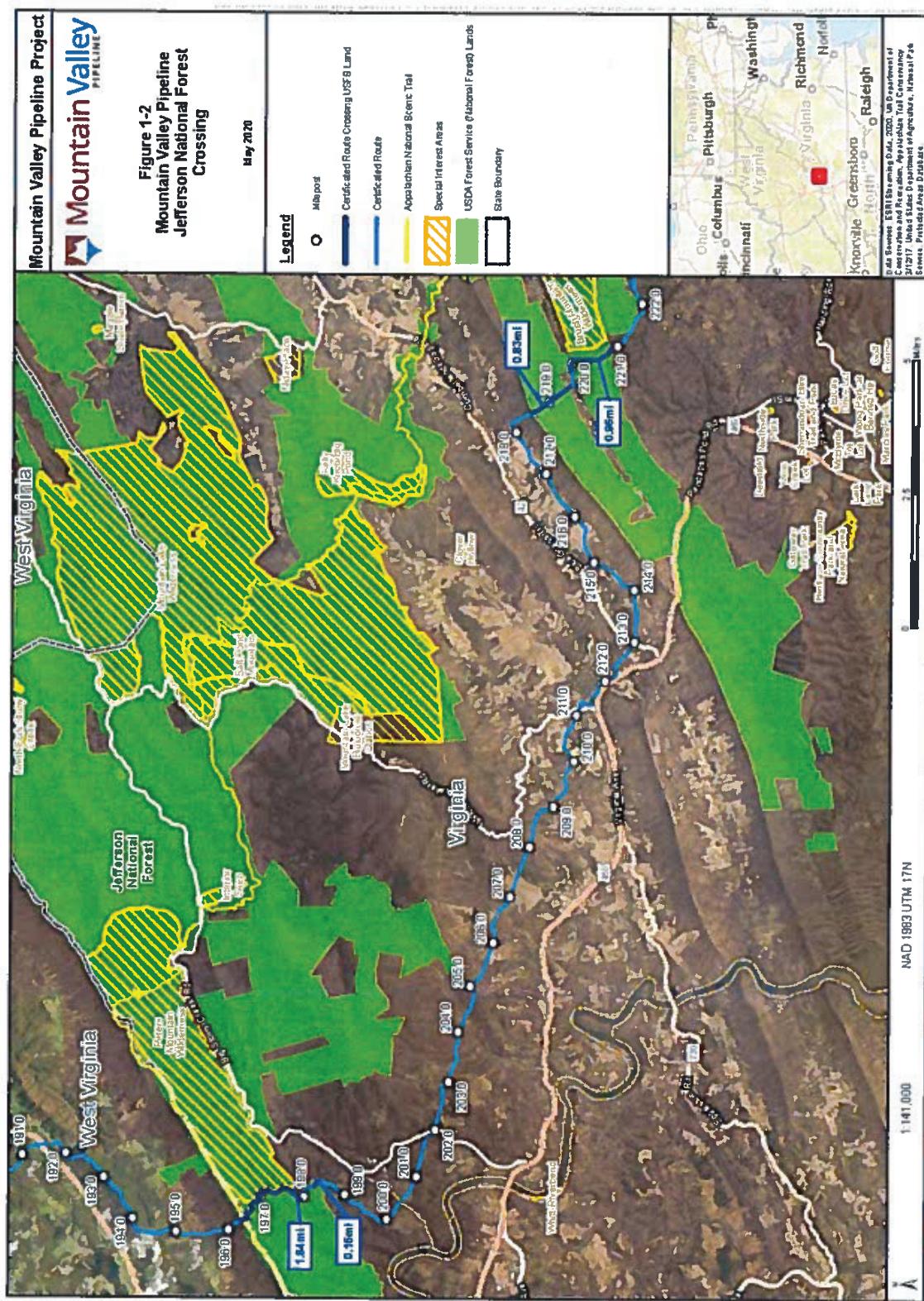


Plan of Development
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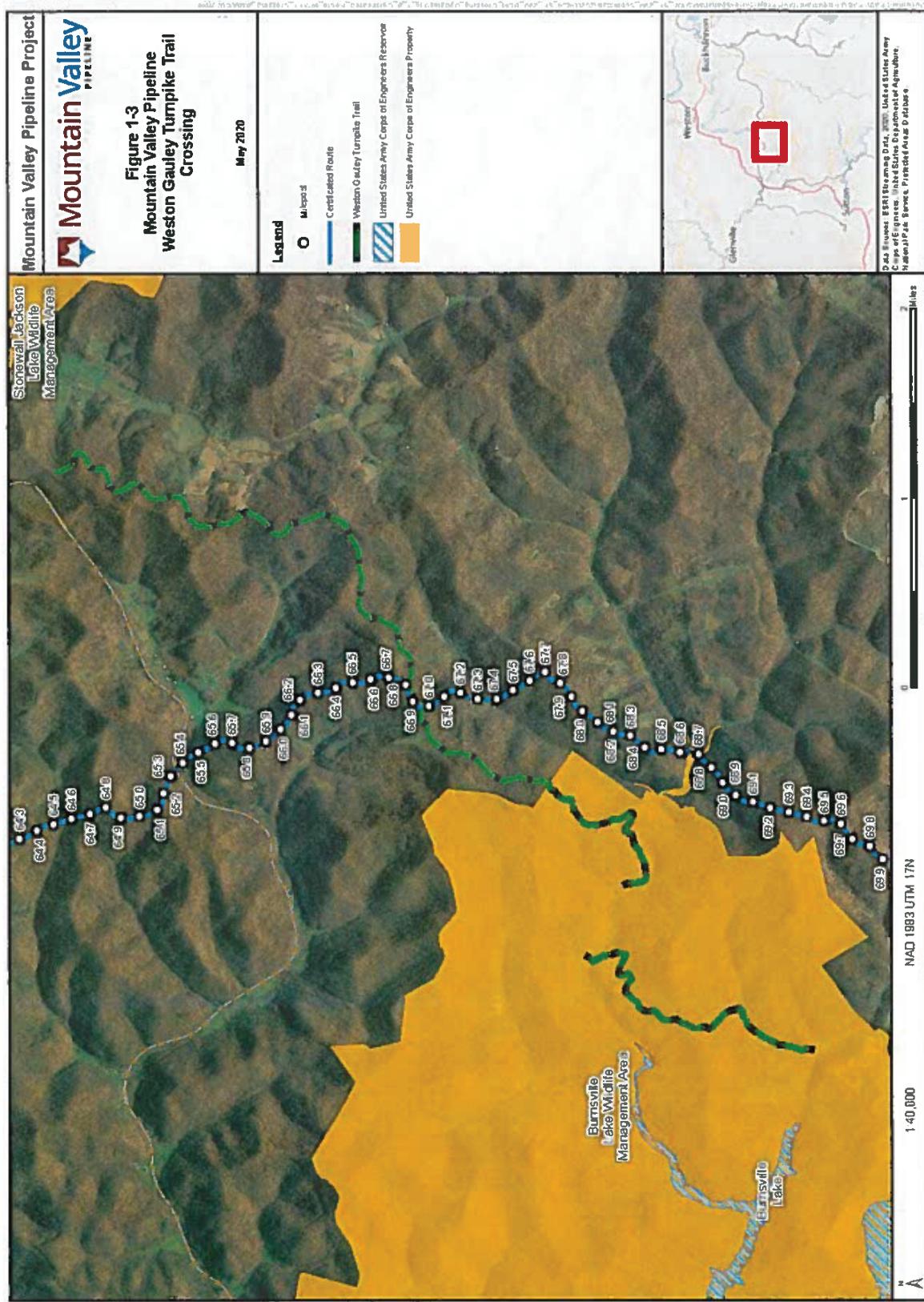
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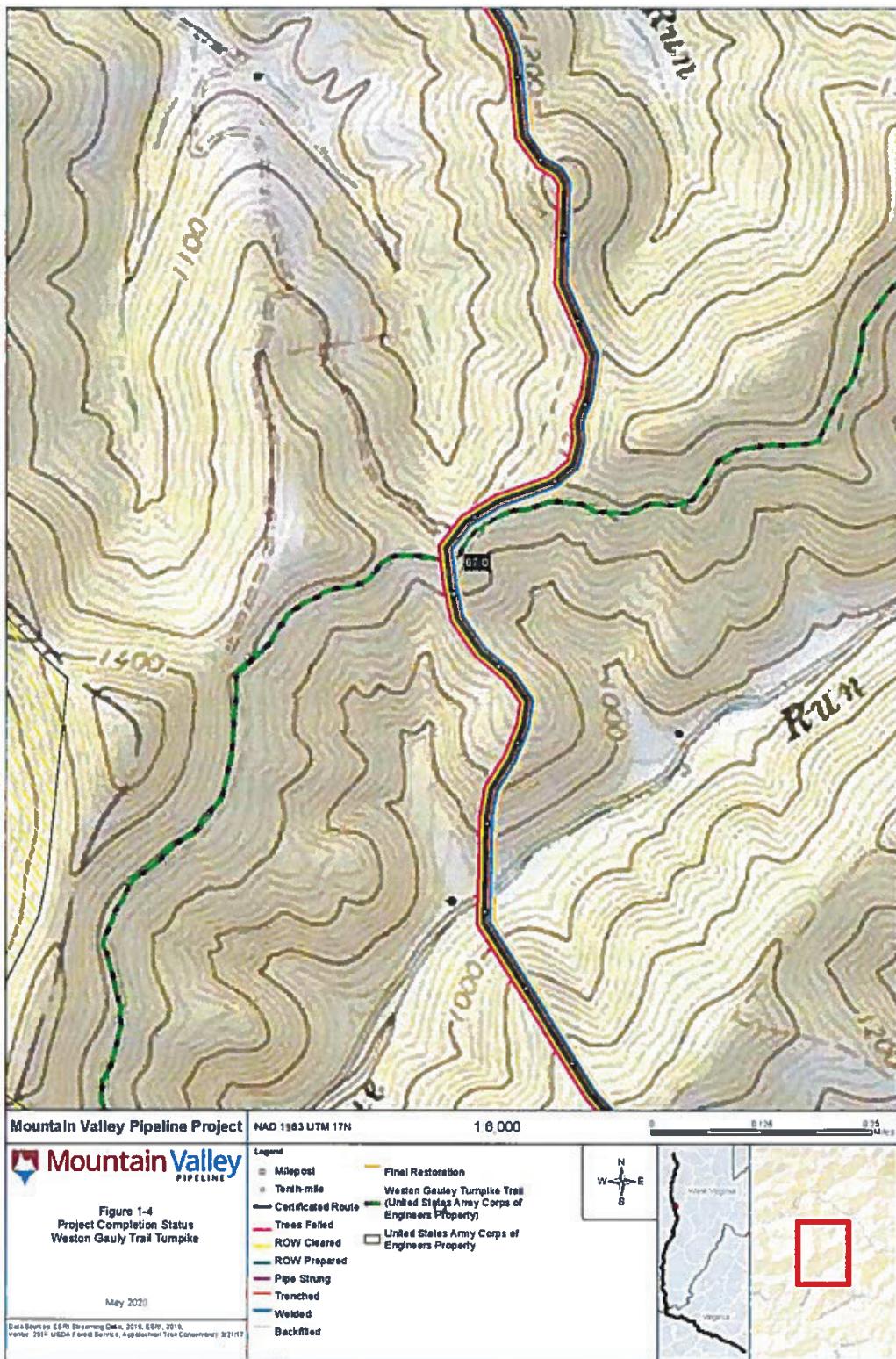
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Plan of Development
Mountain Valley Pipeline Project



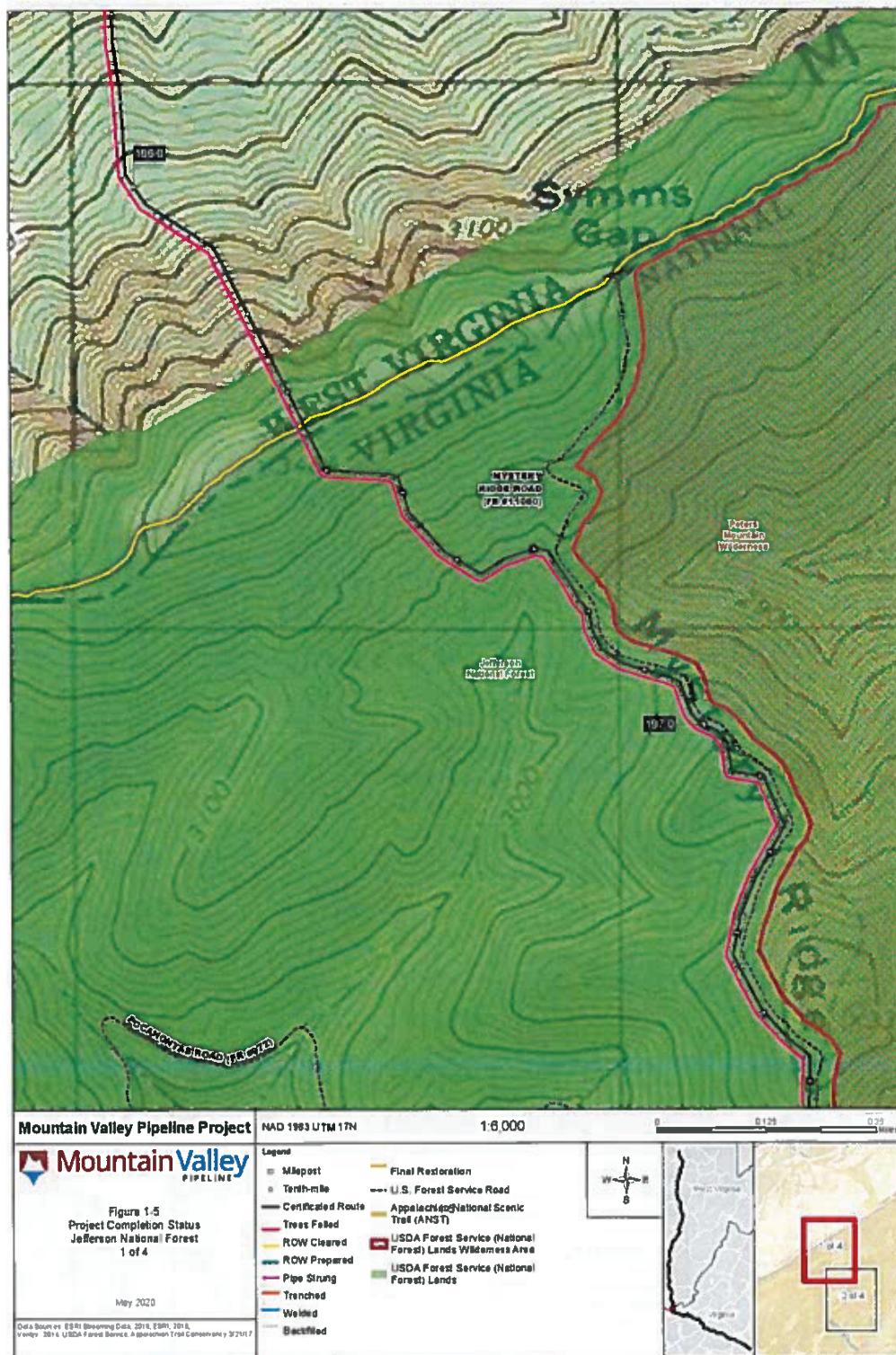


Plan of Development
Mountain Valley Pipeline Project



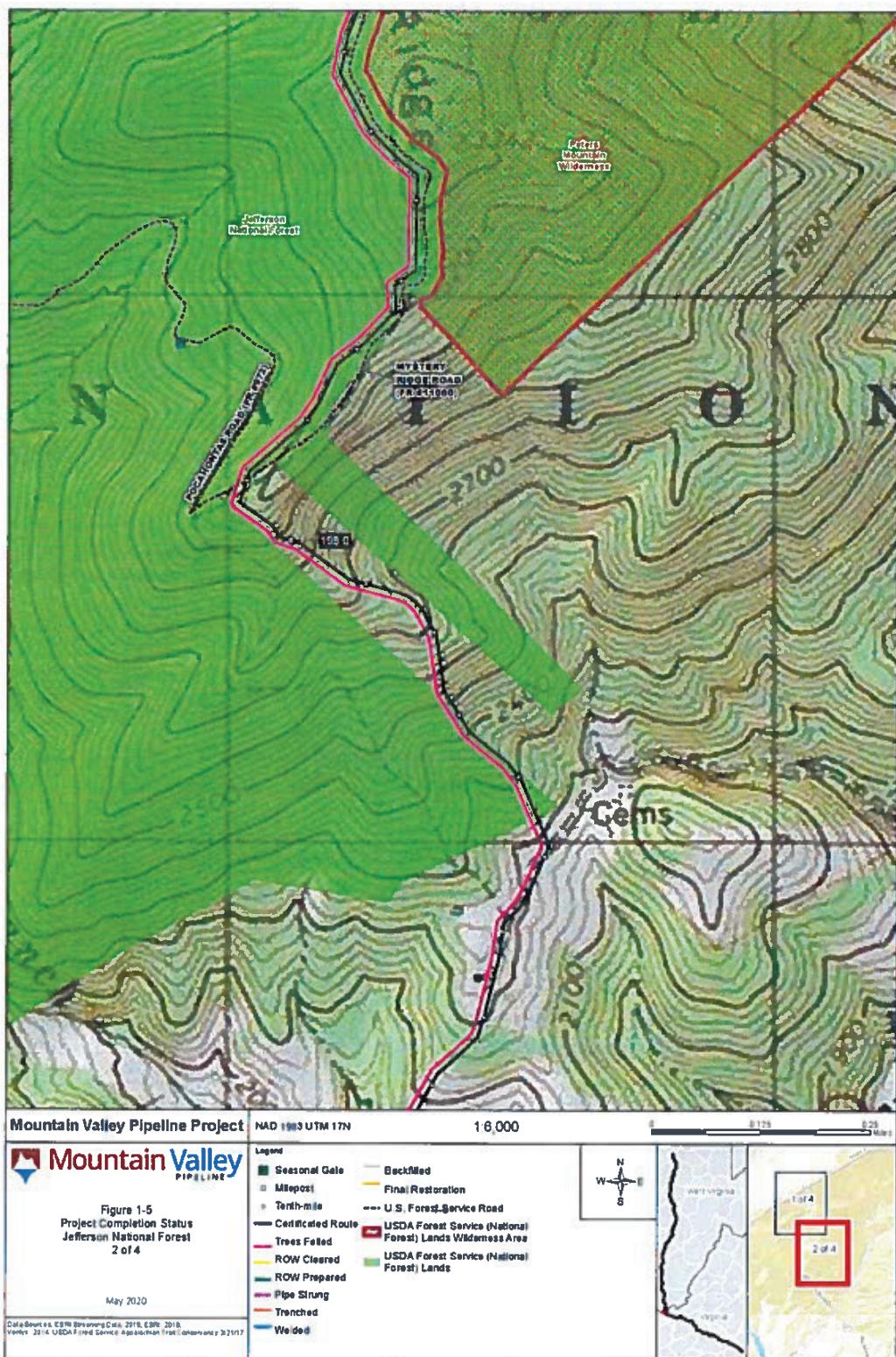


Plan of Development
Mountain Valley Pipeline Project



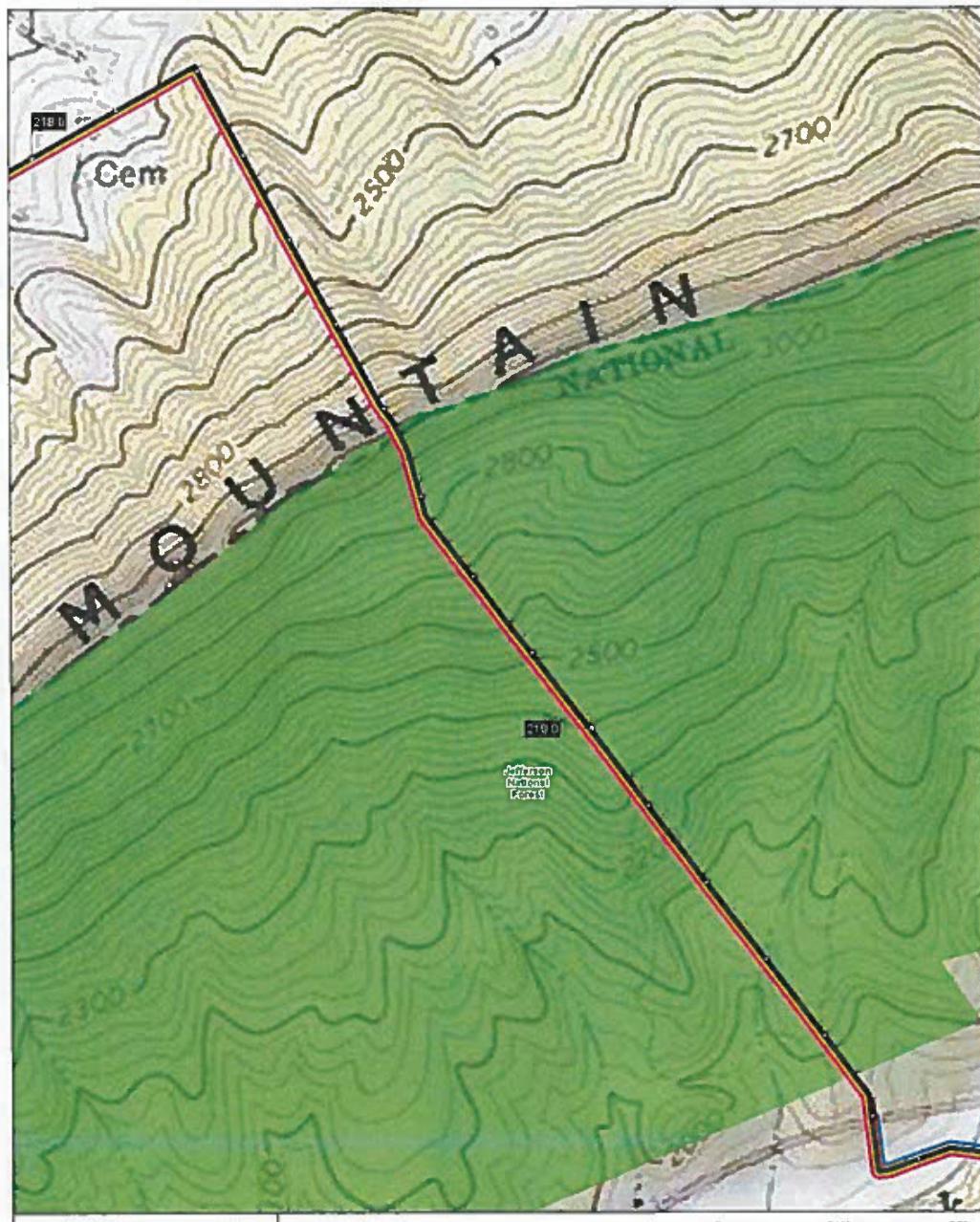


Plan of Development
Mountain Valley Pipeline Project





Plan of Development
Mountain Valley Pipeline Project



Mountain Valley Pipeline Project



Figure 1-5
Project Completion Status
Jefferson National Forest
3 of 4

May 2020

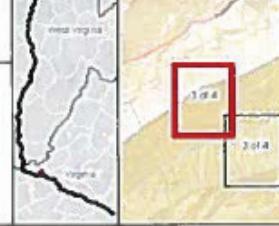
Data Source: EBRI Screening Data, 2018, EBRI, 2018,
Version 2018 USDA Forest Service, A geospatial Trail Census entry 3/21/17

NAD 1983 UTM 17N

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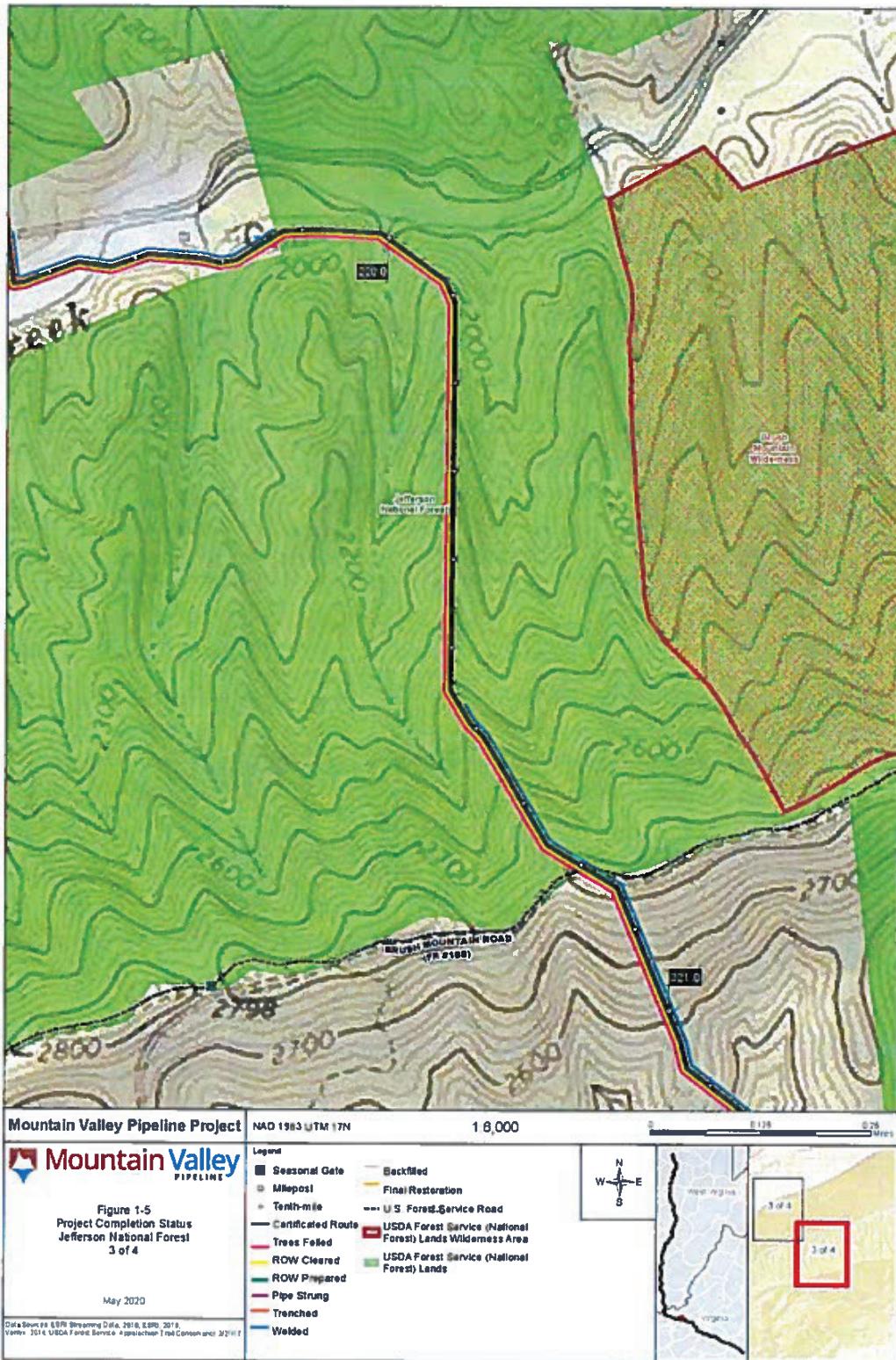
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- Legend
- Milepost
 - Tenth-mile
 - Certificated Route
 - Trees Felled
 - ROW Cleared
 - ROW Prepared
 - Pipe Strung
 - Trenched
 - Welded
 - Backfilled
 - Final Restoration
 - USDA Forest Service (National Forest) Lands



Plan of Development
Mountain Valley Pipeline Project





1.2 Project Purpose

The pipeline will transport up to 2.0 million dekatherms per day of natural gas from the Appalachian Basin to growing markets in the mid-Atlantic and southeastern United States. The purpose of the Project is to provide timely, cost-effective access to supplies to meet the growing demand for natural gas for use by local distribution companies, industrial users, and power generation facilities in the mid-Atlantic, southeastern, and Appalachian markets. The Project will also provide the opportunity for unserved and underserved markets along the route to access natural gas supplies. For example, the routing of the project through the southwest Virginia area resulted in Roanoke Gas Company becoming a Project shipper and requesting a specific tap location to support its local distribution company system's growth and expansion. Roanoke Gas Company's involvement as a shipper and its site-specific delivery point are concrete evidence of MVP's purpose and need to provide opportunities for economic growth and development along the route of the Project.

In recent years, the North American natural gas market has seen enormous growth in production and demand. The United States Energy Information Administration (EIA) estimates that under most scenarios, the total natural gas consumption in the United States will increase from 31 trillion cubic feet (Tcf) in 2020 to up to about 35 Tcf in 2050 (EIA 2022). The largest portion of this growth in gas demand is expected to occur in the industrial and electric generation sectors (EIA 2022).

A sizable portion of natural gas production growth is occurring in the Appalachian Basin shale region. Appalachian Basin shale gas production has increased from 2 billion cubic feet per day (Bcf/d) in 2010 to over 23 Bcf/d in October 2017 (EIA 2017). The Project will provide for transportation of these prolific natural gas supplies to Station 165, the pooling point for natural gas in Transco Zone 5, where this natural gas can serve the growing demand for natural gas for use by Local Distribution Companies (LDCs), industrial users, and power generation facilities all along the Eastern seaboard.

1.3 Dimensions of the Right-of-Way and Related Facilities on Federal Lands

The ROW on the JNF is approximately 3.5 miles long. The construction ROW will be generally 125 feet wide; however, the width has been reduced in some areas. The construction ROW will include approximately 53 acres on USFS lands (Table 1-1). There will be approximately 0.7 acre of additional temporary workspace (ATWS) on the JNF, which will be used for the temporary staging of equipment for special construction techniques. ATWS used to support construction are shown on figures included in Appendix A-1. The operational ROW will be 50 feet wide, covering an area of approximately 22 acres. No equipment storage areas will be required in the JNF during operation.

**Table 1-1.** Land Requirements for the Mountain Valley Pipeline Project on Federal Land

Facility	Land Required for Construction (acres)	Land Required for Operation (acres)
JNF Crossing		
Pipeline a/	50.7	21.62
Additional Temporary Workspace	0.66	0.00
Access Roads	2.27	0.00
ANST Bore b/	0.00	0.00
Weston and Gauley Turnpike		
Pipeline c/	0.00	0.07
Additional Temporary Workspace	0.00	0.00
Access Roads	0.00	0.00

a/ Acreage based on maximum 125-foot-wide construction ROW and 50-foot-wide permanent ROW.

b/ Workspace for the ANST bore will be located within the standard construction ROW reported for the pipeline.

c/ MVP completed a bore under the approximate 60-foot USACE Weston and Gauley Turnpike property therefore no federal lands were affected. The total bore length was approximately 130 feet.

The Weston and Gauley Turnpike crossing was completed via conventional bore resulting in no disturbance to USACE property. MVP completed an approximate 130-foot bore that retained an approximate 20-foot vegetative buffer on each side of the USACE property boundary. Crossing the Weston and Gauley Turnpike by bore and retaining a 20-foot vegetation buffer on each side avoided short-term and long-term impacts to the Turnpike itself and the experience of Turnpike users.

In accordance with JNF-FW-158,⁴ for the crossing of the Appalachian National Scenic Trail (ANST) on JNF lands, MVP will install the pipe via bore under the ANST, leaving an approximate area of no disturbance of 307 feet on the south side of the trail and 273 feet on the north side of the trail where tree clearing and land disturbance will not occur. The areas of no disturbance of 307 feet on the south side and 273 feet on the north side of the ANST refer to those between the safety fence that will be installed in front of the bore pits and the ANST. These barriers will be set up approximately ten feet in front of each bore pit to provide for the safety of workers and visitors to the ANST during construction activities. Thus, there is approximately 580 feet between the bore pits.

Bore plan drawings for both the Weston and Gauley Turnpike and the ANST can be found in Appendix A-2 of the POD.

1.4 Existing Rights-of-Way

This Project is not an ancillary facility to any existing ROW; it is independent of any other action currently taking place on USACE or JNF property. However, where feasible, MVP has co-located the Project with existing infrastructure. Table 1-2 identifies areas where MVP is co-located with other infrastructure and a description of that infrastructure.

⁴ This POD uses "JNF-FW-XX" to refer to management standards in the JNF LRMP.



Table 1-2. Existing Corridors Adjacent to the Proposed Project

Name	Type	Mile Post Begin	Mile Post End	Distance (feet)	Offset between Pipe and Edge of Road ROW (feet)	Construction ROW Overlap (feet)
JNF Crossing						
Mystery Ridge Road (FR #11080)	Forest Road	196.75	197.8	6,071	0 to 137.7	0 to 15

1.5 Alternative Routes or Locations

MVP has attempted to avoid or minimize impacts on environmental resources, particularly the significant natural resources of the public, federally managed lands in the area, including the National Forests, National Parks, Wilderness Areas, and the ANST, while also allowing for a constructible route. MVP evaluated several route alternatives and variations to accomplish this goal, including a conceptual straight-line alternative, which would have resulted in the pipeline crossing approximately 77 miles of National Forest System (NFS) lands.



2.0 RIGHT-OF-WAY LOCATION

2.1 Legal Description

A legal description of federal lands on the JNF and USACE-managed lands crossed by the Project is presented in Table 2.1.

Table 2-1. Legal Description of the Federal Lands on the JNF and USACE-Managed Lands

Parcel Number	Main Contact	Legal Description	Title Comments
n/a	Corps of Engineers, Huntington, West Virginia	A certain tract of land situated in the State of West Virginia, Braxton County, Salt Lick District, on the ridge between Barbecue Run and Clover Fork, tributaries of Knawl Creek and Oil Creek, respectively. Said tract is located entirely within a sixty (60) foot strip of land surveyed by the Corps of Engineers, Huntington, West Virginia, for a trail along the general alignment of the old Weston and Gauley Bridge Turnpike. Being the lands described in that certain Warranty Deed dated June 9, 1981, recorded in Deed Book 387 Page 778 of the records in the office of the County Clerk of Braxton County, West Virginia	No Assessor's Parcel Number (APN) assigned
WV-MO-074	U.S Forest Service, George Washington & Jefferson National Forests, 5162 Valleypointe Parkway, Roanoke, VA 24019	Being the southern portion of that tract of land located near the top of Peters Mountain, in the Red Sulphur Magisterial District, of Monroe County, West Virginia. Being the lands described in that certain Warranty Deed dated October 10, 1988, recorded in Deed Book 183 Page 793 of the records of the office of the County Clerk of Monroe County, West Virginia	USA Forest Service Tract 1426. APN 03-35-7.1
VA-GI-002	U.S Forest Service, George Washington & Jefferson National Forests, 5162 Valleypointe Parkway, Roanoke, VA 24019	480.48 acres, more or less, Eastern District, in Giles County, Virginia, being the same lands described in that certain deed dated December 28, 1984, from National Gypsum Company to United States of America and recorded in Deed Book 187, Page 528 of the records in the office of the Circuit Court Clerk of Giles County, Virginia and further described in the plat dated July 27, 1983, and recorded in Deed Book 187, Page 533	USA Forest Service Tract 1130a. APN - 16-2
VA-GI-001	U.S Forest Service, George Washington & Jefferson National Forests, 5162 Valleypointe Parkway, Roanoke, VA 24019	102.83 acres, more or less, Pembroke Magisterial District, Giles County, Virginia, being the same lands described in that certain Warranty Deed dated December 5, 1983, from American Resources, Inc. to the United States of America and recorded in Deed Book 182, Page 717 of the records in the office of the Circuit Court Clerk, Giles County, Virginia	USA Forest Service Tract 1169a APN - 16-3B

**Table 2-1.** Legal Description of the Federal Lands on the JNF and USACE-Managed Lands (continued)

Parcel Number	Main Contact	Legal Description	Title Comments
VA-GI-002.02 (AR MO-232)	U.S Forest Service, George Washington & Jefferson National Forests, 5162 Valleypointe Parkway, Roanoke, VA 24019	4,477.68 acres, more or less, in the Pembroke, Pearisburg, and Narrows Magisterial Districts, in Giles County, Virginia, being described in that certain deed, dated July 8, 1968, from Pocahontas Land Corporation to the United States of America, and recorded in Deed Book 118, Page 458 of the records in the office of the Circuit Court Clerk of Giles County, Virginia.	USA Forest Service Tract 968 NO APN
VA-MO-001	U.S Forest Service, George Washington & Jefferson National Forests, 5162 Valleypointe Parkway, Roanoke, VA 24019	2,840.4 acres, more or less, in the Mt. Tabor Magisterial District, in Montgomery County, Virginia, being described as Tract 527 in that certain deed, dated March 11, 1940, from The American Security & Trust Company, Trustee of the Estate of Basil B. Gordon, Deceased, The Safe Deposit & Trust Company of Baltimore, Trustee of the Estate of Douglas H. Gordon, Deceased, and Elizabeth Clarke Gordon, to the United States of America, and recorded in Deed Book 115, Page 385 of the records in the office of the Circuit Court Clerk of Montgomery County, Virginia; and 4,284.7 acres in the Mt. Tabor Magisterial District, In Montgomery County, Virginia, being described in that certain deed, dated February 19, 1937, from Max N. Manbeck and Lydia V. Manbeck to the United States of America and recorded in Deed Book 105, Page 256 of the records in the office of the Circuit Court Clerk of Montgomery County, Virginia.	USA Forest Service Tracts 527 and 201 APN - 070756

2.2 Site-Specific Engineering Surveys for Critical Areas

MVP has completed land boundary and monument surveys in locations identified to cross or be close to FS property. Surveys depict the property boundary, any relevant property corners, monuments, and the proposed disturbance footprint of the Project in relation to the boundary and corners. The information collected is included on the Alignment Sheets and Exhibit Maps in Appendix A. Surveys were conducted by a professional land surveyor licensed in Virginia and West Virginia. The Exhibit Maps show the Project footprint, delineating centerline of the route, the permanent ROW, the temporary workspace, the centerline of the access roads, and the ATWS areas with acreages (metes and bounds shown thereon) to be encumbered on NFS lands. The Exhibit Maps also show boundary and monument information related to affected FS property boundaries. Following construction of the Pipeline, Mountain Valley will reestablish any boundary lines, corners, and monuments necessary and provide as-built drawings to the FS and USACE depicting the location of the pipeline on each property.

Maps and drawings are presented in Appendix A and Appendix B of the POD.



2.3 Acre Calculation of the Right-of-way by Land Status

Table 2-2 lists the acres within the construction ROW and ATWS by management prescription area identified in the Revised JNF Land and Resource Management Plan for the Jefferson National Forest (2004).

Table 2-2. Acre Calculation of the Project Facilities (Access Road, Work Spaces, and the ROW) by Land Status Management Prescription Area

Management Prescription Area ¹	Access Road	ATWS	Construction ROW
4.A Appalachian National Scenic Trail	0.0	0.0	2.3 ²
4.J Urban-Suburban Interface Area	0.0	0.0	14.1
6.C Old-Growth Forest	0.0	0.6	4.6
8.A.1 Mix of Successional Habitats	0.0	0.1	29.9
Total	0.0	0.7	50.9

Notes:

1. The acres shown in this table are GIS estimates. Numbers are not exact and columns may not sum correctly due to rounding.
2. Construction ROW in Management Prescription Area 4.A does not include acreage between the ANST bore pits because the surface of the National Forest in that area, including the strip of Forest Service land used for the Trail footpath, will not be affected by construction.



3.0 FACILITY DESIGN FACTORS

The pipeline and aboveground facilities described in this POD will be designed, constructed, tested, operated, and maintained in accordance with the requirements of 49 CFR Part 192, Transportation of Natural Gas and Other Gas by Pipeline; Minimum Safety Standards; 18 CFR § 380.15, Site and Maintenance Requirements; and other applicable federal and state regulations.

The pipe specifications for the Project are identified in Table 3-1.

Table 3-1. Pipe Specifications

Design Parameter	Specification
Maximum Allowable Operating Pressure (pounds per square inch gauge)	1,480
Wall Thickness (inches) a/	0.617 – 0.888
Grade of Steel	X-70

Note: a/ Wall thickness depends on the class of pipe installed (either class 1, 2, or 3)

The Project includes Class 2 pipe buried at least three feet below the ground surface within the JNF. The product transported by the Project will be natural gas. The pipeline operating temperature is expected to be that of the ground temperature. Slight temperature variations may occur immediately downstream of compression, but the pipeline temperature will equilibrate with the surrounding soils within a relatively short distance.

The operational ROW will be 50 feet wide.



4.0 ADDITIONAL COMPONENTS OF THE RIGHT-OF-WAY

The pipeline ROW does not connect to any existing pipeline ROW on the JNF or on USACE managed lands. Table 1-2 shows other corridors adjacent to the pipeline ROW. No additional components are proposed for future development on either the JNF or USACE-managed lands. There are no pumping, metering, compressor stations, mainline valves, or cathodic protection sites on either the JNF or USACE-managed lands. ATWS utilized for equipment staging areas and other construction-supporting activities are shown on the Alignment Sheets included as Appendix A-1. There will be no ATWS required following completion of construction and during operation. Mountain Valley also intends no further use of Pocahontas Road (FR #972). Portions of Mystery Ridge (FR #11080) road that parallel the ROW may be disturbed as part of the ROW construction for the pipeline. Appendix A-1 shows areas where the road will be utilized. MVP will not use Brush Mountain Road (FR #188) for construction traffic. Signage will be posted during construction letting construction traffic know that these roads cannot be used by Project construction traffic. Mountain Valley construction and operation personnel and equipment will be required to access the ROW via crossings from public roads. Access to the bore pit on the West Virginia side of the ANST will occur from Green Valley Road. Equipment will travel the ROW from Green Valley Road to the proposed bore pit location. Mountain Valley will utilize several ROW access points from Rogers Road on the south side of Peters Mountain. Equipment will travel the ROW from Rogers Road onto JNF lands. In addition, Mountain Valley will utilize a previously approved access road to enter the ROW from Cumberland Gap Road. Equipment will travel the ROW from that access point onto JNF lands on top of Sinking Creek Mountain. An additional access point at Craig Creek Road will be utilized to access the ROW on both Sinking Creek and Brush Mountains.



5.0 GOVERNMENT AGENCIES INVOLVED

Table 5-1 lists the agencies that are involved with the permitting and regulatory process for the Project. Mountain Valley has provided the FS, BLM, and USACE with copies of all relevant filings, including the 7c FERC application. In addition, copies of these materials have also been provided to the JNF and BLM contractor, Galileo Project, to add to the administrative record for the Project. Mountain Valley will continue to provide copies of relevant filings to the USACE, BLM, FS, and Galileo Project.

Table 5-1. Agencies with Relevant Permit or Consultation Requirements

Agency	Permit/ Approval/ Consultation a/	Consultation Initiated	Application Filed	Authorization Receipt Date	Contact Information
Federal					
Federal Energy Regulatory Commission	NGA Section 7; Certificate for construction and operation of interstate natural gas pipeline	October 16, 2014	October 23, 2015; February 10, 2021	October 13, 2017; April 8, 2022	Paul Friedman 202-502-8059
Bureau of Land Management	Right-of-way grants for USACE Weston and Gauley Turnpike and NFS lands. Plan of Development submittal	February 2016	April 2016; May 2020; March 2022	4th Quarter 2017; 1st Quarter 2021; 2nd Quarter 2023	Robert Swithers 601-919-4650
Bureau of Indian Affairs, Eastern Regional Office	Consultation regarding which tribes may have potential interest in project area or presence of traditional cultural properties, and contact tribes as appropriate	October 13, 2014	N/A	N/A	Bruce Maytubby 615-564-6500
U.S. Department of Transportation (USDOT), Office of Safety, Energy, and the Environment	Introductory consultation to the project	October 13, 2014	N/A	N/A	Barbara McCann 202-366-4540
USDOT, Office of Pipeline Safety	Pre-construction notification	90-days prior to the start of construction	4th Quarter 2017	N/A	N/A



Table 5-1. Agencies with Relevant Permit or Consultation Requirements (continued)

Agency	Permit/ Approval/ Consultation a/	Consultation Initiated	Application Filed	Authorization Receipt Date	Contact Information
National Park Service (NPS) Southeast Region Blue Ridge Parkway	Consultation regarding potential impacts to the Blue Ridge Parkway	October 13, 2014	N/A	N/A	Bambi Teague 828-348-3439
	Cultural Resource Survey Permission on NPS Lands		March 20, 2015; November 13, 2015; June 2, 2016; October 17, 2016	May 27, 2016; June 14, 2016	
	Survey Permission on NPS lands		April 24, 2015; November 13, 2015; January 13, 2016; June 1, 2016; October 17, 2016	May 25, 2016	
	ROW through NPS lands		November 10, 2016	December 28, 2017; September 30, 2020	
	Special Use Permit for Construction		November 10, 2016	December 20, 2017; September 29, 2020	
NPS, Northeast Region, Appalachian Trail Park Office (NPS-APPA) for the ANST b/	Consultation regarding potential impacts to the administration of the ANST footpath on USFS-managed land	October 13, 2014	N/A	N/A	Wendy Janssen 304-535-6279
USACE, Huntington District	Section 404 Permit for impacts on waters of the U.S., including wetlands Section 10 Permit for activities affecting navigation	October 13, 2014	February 21, 2016; update February 17, 2017; January 27, 2020; February 19, 2021	December 22, 2017, September 25, 2020; TBD	Teresa Spagna 304-399-5210
USACE, Norfolk District	Same as USACE, Huntington District	October 13, 2014	February 21, 2016; update September 11, 2017; February 19, 2021	December 26, 2017; January 23, 2018; TBD	Vincent Pero 757-297-0011

**Table 5-1. Agencies with Relevant Permit or Consultation Requirements (continued)**

Agency	Permit/ Approval/ Consultation a/	Consultation Initiated	Application Filed	Authorization Receipt Date	Contact Information
USACE, Pittsburgh District	Same as USACE, Huntington District	October 13, 2014	February 21, 2016; update February 17, 2017; January 27, 2020; February 19, 2021	December 19, 2017, September 25, 2020; TBD	Jared Pritts 412-395-7100
U.S. Department of Agriculture (USDA), Virginia	Consultation regarding organic farmland	October 13, 2014	N/A	N/A	John David Harper 804-287-1736
USDA, West Virginia	Same as USDA, Virginia	October 13, 2014	N/A	N/A	Joe Hatton 304-284-7564
EPA, Region 3 Air Protection Division	Project introduction and air permitting requirements	October 13, 2014	N/A	N/A	Diana Esher 215-814-2900
FS – Jefferson National Forest	Survey Permission on NFS lands	September 11, 2014	March 10, 2015; September 23, 2015; September 22, 2016; April 5, 2017; March 5, 2021; April 28, 2021	May 12, 2015; September 30, 2015; October 12, 2016; May 2, 2017; April 7, 2021; May 10, 2021	Dan Olsen 409-909-0247
	Cultural Resource Survey Permission on NFS lands		February 4, 2016; September 21, 2016; December 8, 2016	February 16, 2016; January 11, 2016	
	FS Plan Amendments and ROW Concurrence to the BLM		February 28, 2017	December 2017	
	FS Plan Amendments and ROW Concurrence to the BLM		February 28 ,2017; May 1, 2020; June 3, 2022	December 2017; January 11, 2021; 2 nd Quarter 2023	
U.S. Fish and Wildlife Service, Virginia and West Virginia Field Offices	Consultation under Section 7 of ESA for potential impacts on federally protected species	September 24, 2014	N/A	N/A	Cindy Schulz 804-654-1842
	Consultation regarding impacts on migratory birds and fish and wildlife	March 2015	N/A	N/A	

**Table 5-1.** Agencies with Relevant Permit or Consultation Requirements (continued)

Agency	Permit/ Approval/ Consultation a/	Consultation Initiated	Application Filed	Authorization Receipt Date	Contact Information
	Biological Assessment/ Biological Opinion	March 2015	July 10, 2017 (FERC)	November 21, 2017	
	Biological Assessment Supplement/Biological Opinion	September 11, 2019	April 27, 2020	September 4, 2020	
	Biological Assessment Supplement/Biological Opinion	July 29, 2022	July 29, 2022	February 28, 2023	
Virginia					
Virginia Department of Forestry	Consultation regarding potential impacts to state-managed forests	October 13, 2014	N/A	N/A	Brad Williams 434-997-6555
Virginia Department of Wildlife Resources (VDWR)	Consultation regarding potential impacts to state-managed lands; Consultation for state threatened and endangered species	October 13, 2014	N/A	N/A	Amy Martin 804-367-2211
Virginia Department of Mines, Minerals, and Energy – Division of Gas and Oil	Introductory consultation to the project	October 13, 2014	N/A	N/A	Rick Reynolds 540-248-9360
Virginia Department of Transportation (VDOT)	Road bonds and crossing permits	October 13, 2014	4th Quarter 2016	4th Quarter 2017	Stephen Phillips 540-315-5597
Virginia Department of Historic Resources (VDHR), Division of Review and Compliance (SHPO)	Consultation and clearance regarding potential impacts on pre-historic and historic resources eligible for listing on the National Register of Historic Places	October 21, 2015	N/A	N/A	Roger Kirchen 804-482-6091
Virginia Department of Conservation and Recreation (VDCR), Natural Heritage	Consultation on potential impacts to wildlife species and habitat	October 3, 2014	N/A	N/A	Robbie Rhur 804-371-2594
VDCR, Division of Natural Heritage	Consultation for state-managed lands	October 13, 2014	N/A	N/A	Rene Hypes 804-371-2708

**Table 5-1.** Agencies with Relevant Permit or Consultation Requirements (continued)

Agency	Permit/ Approval/ Consultation a/	Consultation Initiated	Application Filed	Authorization Receipt Date	Contact Information
Virginia Department of Environmental Quality (VDEQ), Water Division	Water Quality Certification for construction and operation impacts on water and wetlands	October 13, 2014	N/A, conditional certification of USACE NWP already issued; March 4, 2021	N/A, conditional certification of USACE NWP already issued; December 20, 2021	Melanie Davenport 804-698-4038
VDEQ, Office of Stormwater Management	Annual Plan Holder Specifications	October 13, 2014	February 11, 2016	June 20, 2017	Rebecca Rochet 804-801-2950
VDEQ, Office of Stormwater Management	Erosion and Sediment Control per 9VAC25-840 and the Virginia Erosion and Sediment Control Handbook. Stormwater Management per 9VAC25-870 and the Virginia Stormwater BMP Clearinghouse	October 13, 2014	Spread 8 - June 19, 2017; updated August 8, 2017 and November 1, 2017. Spreads 9 and 10 – September 21, 2017; update anticipated November 22, 2017. Spread 11 – September 11, 2017; update anticipated November 22, 2017.	4th Quarter 2017	Rebecca Rochet 804-801-2950
VDEQ Office of Water Supply	General Permit No. VAG83 for water discharge	January 13, 2016	March 22, 2016	N/A	Anthony Cario 804-698-4089
VDEQ Office of Water Permitting	General Permit 9VAC25-200-10 for water withdraw	January 13, 2016	March 22, 2016	N/A	Kip Foster 540 562-6782
Virginia Marine Resource Commission	Submerged Lands License	December 3, 2015	February 24, 2016; updated September 11, 2017; February 19, 2021	4th Quarter 2017; July 25, 2022	J. Michael Johnson 757-247-2255
VDEQ, Office of Environmental Impact Review	Introductory consultation to the project	October 13, 2014	N/A	N/A	Julia Wellman 804-698-4326

**Table 5-1. Agencies with Relevant Permit or Consultation Requirements (continued)**

Agency	Permit/ Approval/ Consultation a/	Consultation Initiated	Application Filed	Authorization Receipt Date	Contact Information
Virginia Outdoors Foundation	Access or Utility Easement Application	June 2014	January 2016	4th Quarter 2017	Martha Little and Harry Hibbitts 504-332-8906
West Virginia					
West Virginia Department of Environmental Protection (WVDEP), Division of Air Quality	Air Quality permit for air emissions	October 10, 2014	N/A	N/A	Roy Kees 304-926-0499
	Bradshaw Compressor Station	N/A	October 21, 2015	March 14, 2016	
	Harris Compressor Station	N/A	October 21, 2015	March 4, 2016	
	Stallworth Compressor Station	N/A	October 21, 2015	April 11, 2016	
West Virginia Department of Conservation and Natural Resources	Licenses and Rights of Entry Permits	May 2016	Multiple Submission 2015 - 2021	Multiple Approvals 2015 - 2021	Carrie Brooks 304-558-3225
WVDEP, Division of Water and Waste Management	401 Water Quality Certification for construction and operation impacts on water and wetlands	October 10, 2014	February 25, 2016; December 1, 2016; March 4, 2021	March 23, 2017; December 30, 2021 (vacated April 3, 2023); Pending	Nancy Dickson 304-926-0499
West Virginia Department of Highways	Road bonds and crossing permits	July 28, 2015	2nd Quarter 2016	4th Quarter 2017	Gary Clayton 304-476-4496
WVDEP, Division of Water and Waste Management	National Pollutant Discharge Elimination System (NPDES) Permit – Construction Stormwater General Permit for Construction Activities	October 13, 2014	February 23, 2016; update filed December 23, 2016 and February 2017	July 14, 2017; re-issued November 1, 2017	Rick Adams 304-926-0499
WVDEP, Division of Water and Waste Management	NPDES Hydrostatic Test Discharge Permit	October 13, 2014	March 21, 2016	September 12 and 13, 2017	John Perkins 304-926-0499

Notes:

N/A = not applicable

a/ Consultations will occur continuously throughout the development of the Project.

b/ The National Trails System Act (NTSA) of 1968 (Public Law 90-543) designated the Appalachian Trail as the first National Scenic Trail and designated the National Park Service as the administrator of the Trail, in cooperation with the USFS and other federal land managers, states, private parties, and the Appalachian Trail Conservancy. The Appalachian Trail Park Office (NPS-APPA) is the specific NPS administrative entity. The NTSA did not change land management jurisdiction responsibilities within USFS lands.



6.0 CONSTRUCTION OF THE FACILITIES

6.1 Construction

MVP intends to implement all conditions outlined in the FERC Certificate, BLM Right-of-Way Grant, Revised JNF Land and Resource Management Plan for the Jefferson National Forest (2004), United States Army Corps of Engineers Nationwide Permit, and the WV and VA Erosion and Sediment Control Plans (E&SCP) (Appendix C) as minimum standards during construction. ROW clearing within JNF was conducted in February 2018. Pipeline construction within JNF began in June 2018 but was halted by a stop work order in August 2018 following a ruling by the Fourth Circuit Court in July 2018⁵. For the work already completed within JNF, MVP requested and received from the JNF multiple notices to proceed. MVP will continue with that process and provide a written request to proceed with construction to the BLM and FERC prior to the start of further construction activities within JNF. The notice to proceed will be evaluated by the BLM (in coordination with the USACE and FS) and FERC. Construction will begin only after receipt of the notice to proceed from both BLM and FERC. MVP will ensure that construction personnel are adequately trained in the environmental restrictions and/or requirements applicable to their particular job duties. Anyone who will be on-site during construction of the Project will be required to have construction management and environmental training specific to the Project. Prior to the start of construction, the training presentation will be provided to the FS and BLM for review and comment. A log will be kept in the construction trailer documenting that everyone on-site during construction has participated in the necessary training sessions. Anyone on the construction site will be required to exhibit a training sticker on their hard hat. It is not anticipated that hazardous waste will be generated or stored during construction of the Project. However, if for any reason hazardous waste is created or uncovered during construction or operation of the Project, the Spill Prevention, Control and Countermeasure (SPCC) Plan and the Unanticipated Discovery of Contamination Plan (Appendix D of the POD) would identify methods for handling the waste. All waste would be disposed of pursuant to state and federal requirements.

Construction of the pipeline will generate noise from heavy machinery and equipment as construction moves in phases along the ROW. Sound from pipeline construction will generally be temporary, sporadic, and short term in any one location along the pipeline route. Because of the temporary and daytime-only nature of pipeline construction activities, no special noise mitigation or noise monitoring is recommended during the construction phase. A possible exception will be the crossing of the ANST where boring equipment will be setup on either side of the crossing and will be in place until the crossing is completed. Current plans do not include a night shift for the ANST crossing, but schedule might dictate the need to conduct night work depending on progress. MVP will notify the FS should night work be required.

MVP anticipates that it will employ the following procedures and standard equipment to construct the Project; however, deviations are possible based on actual field conditions or to comply with regulatory requirements. Mountain Valley does not intend to use any

⁵ Sierra Club, Inc. v. United States Forest Service, 897 F.3d 582 (2018)



specialized equipment to construct the pipeline within NFS lands with the exception of equipment that will be utilized to bore under the ANST.

For the crossing of the ANST, MVP will install the pipe via bore under the ANST, leaving an approximate area of no disturbance of 307 feet on the south side of the trail and 273 feet on the north side of the trail where tree clearing and land disturbance will not occur. The areas of no disturbance of 307 feet on the south side and 273 feet on the north side of the ANST refer to those between the safety fence that will be installed in front of the bore pits and the ANST. These barriers will be set up approximately ten feet in front of each bore pit to provide for the safety of workers and visitors to the ANST during construction activities. Thus, there is approximately 580 feet between the bore pits.

MVP hired Rummel, Klepper and Kahl LLP, a design engineering firm that has expertise in trenchless crossing methods, to assess the different trenchless crossing options for the ANST. The trenchless crossing methods considered were conventional bore, Direct Pipe® Drilling, microtunneling, manned tunnel boring, and horizontal directional drill. The conventional bore, Direct Pipe® Drilling, microtunneling, and manned tunnel boring methods were determined to be feasible and the horizontal directional drill method was determined not to be feasible due to site-specific engineering constraints. MVP asked Rummel, Klepper and Kahl to further assess the specifics (such as location, length, route change, etc.) of the feasible boring options for the ANST. MVP examined the feasible options and weighed the environmental impact, viewshed impact, and installation risks associated with each option. The bore is exhibited in the updated alignment sheets and bore profile in Appendix A of the POD. The alignment sheet updates include aerial imagery; the buffer of 307 feet on the north side and 273 feet on the south side, totaling 580 feet for no vegetation clearing on either side of the trail; and a bore as the proposed construction crossing methodology for the ANST. No ATWS outside of the construction ROW will be needed for the bore of the ANST. The portion of the ANST not included in the bore buffer (described above) will be marked as off-limits to all Project motorized use. However, Project personnel may walk between the bore pits during construction. Should the bore under the ANST fail, MVP will notify and seek approval from FERC and FS to utilize the methods described in the Contingency Plan for the Proposed Crossing of the Appalachian National Scenic Trail (Appendix E of the POD).

The crossing of the Weston and Gauley Turnpike required an approximate 130-foot conventional bore outside of the USACE property boundary.

Construction of the Project has followed and will continue to follow industry-accepted practices and procedures, as further described below. Generally, construction of the proposed pipeline will follow a set of sequential operations as shown in Figure 6-1. In this typical pipeline construction scenario, the construction spread proceeds along the pipeline ROW in one continuous operation. Alignment sheets showing facility locations are in Appendix A-1 of this POD. MVP has created a set of scaled, typical drawings representative of terrain encountered within the JNF and are included in Appendix B of the POD. Drawings depict plans, profiles, and cross sections for flat to gently sloping terrain, wide ridges, sidehill construction with side slopes ranging from 3H:1V to 1.5H:1V, and narrow ridges with side slopes ranging from 3H:1V to 1.5H:1V.



Plan of Development
Mountain Valley Pipeline Project

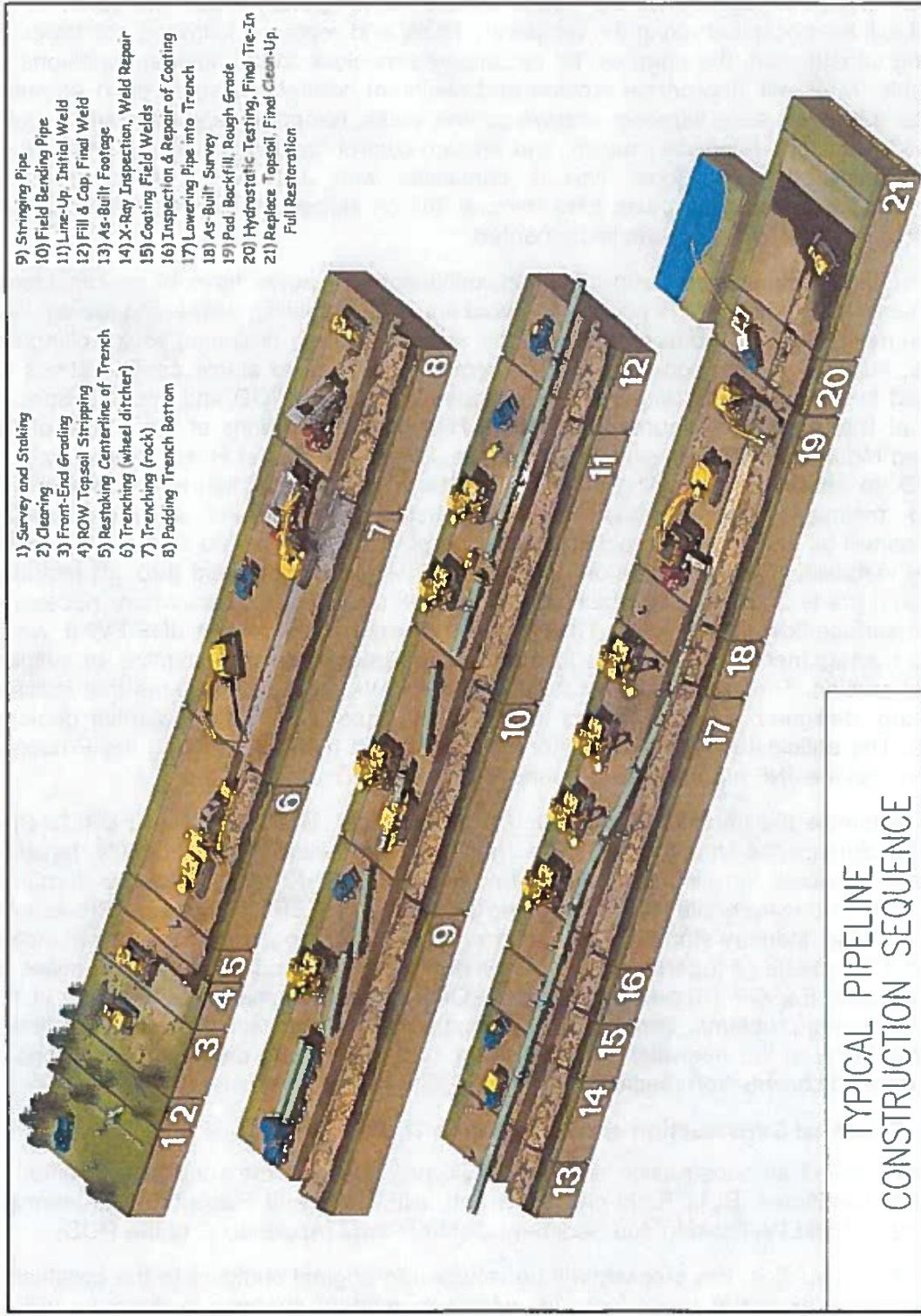


Figure 6-1. Typical Pipeline Construction Sequence



In practice, ridgeline construction will not require substantial excavation. Some material excavated from the ridgeline will be spread across the temporary ROW and some of the material will be stockpiled along the temporary ROW and replaced following construction. Following construction, the ridge will be recontoured as close to the original conditions as practicable. MVP will incorporate erosion and sediment control measures such as super silt fence, silt fence, sock filtration, erosion control socks, temporary and permanent water bars, ditch breakers, temporary mulch, and erosion control blankets as per Project design specifications based on slope. This is consistent with JNF-FW-10, which requires management activities that cause bare mineral soil on slopes greater than 5 percent to have erosion control planned and implemented.

Where stability issues have been identified, mitigation measures have been considered that include realignment of the pipeline to avoid areas of instability, deepening the pipeline below surface instability, buttressing, surface and subsurface drainage, rock bolting/soil anchors, surface stabilization matting, and regrading slopes to stable configurations as described in the *Landslide Mitigation Plan*, Appendix F of the POD and the Site Specific Design of Stabilization Measures in Selected High Hazard Portions of the Route of the Proposed Mountain Valley Pipeline Project in the Jefferson National Forest, Appendix G of the POD. In addition, maintaining proper drainage during construction and operation will help to maintain slope stability. The construction erosion and sediment control measures will be designed to avoid concentration of runoff onto or into steep areas prone to slope instability. Concentration of surface water will be discouraged through restoring the original grade as closely as practical and through use of water bars where necessary to divert surface flow off the ROW. These measures are consistent with JNF-FW-6, which requires management activities to be located and designed to avoid, minimize, or mitigate potential erosion. They are also consistent with JNF-FW-216, which requires that facilities be located, designed, and maintained to avoid, minimize, or mitigate potential geologic hazards. The anticipated location of different construction techniques along the Proposed route through the JNF are shown in Appendix B of the POD.

Also to minimize the impacts of construction disturbance, MVP will utilize FERC's Plan and Procedures. The intent of FERC's Plan and Procedures is to identify baseline mitigation measures for minimizing the extent and duration of Project-related disturbance on wetlands and waterbodies and enhancing revegetation. FERC's Plan and Procedures are used as the "industry standard" and adherence to them is required unless a variance is requested by a state or federal land management agency. In addition, MVP will utilize its Project-specific E&SCP (Appendix C of the POD), as well as measures outlined in the POD. Equipment problems, terrain and soil conditions, and weather can affect the timing and consistency of the operation. The following sections provide detailed descriptions of each proposed construction method.

6.1.1 Standard Construction and Restoration Techniques

MVP will conduct all construction activities in accordance with the conditions outlined in the FERC Certificate, BLM Right-of-Way Grant, JNF Land and Resource Management Plan, and WV and VA Erosion and Sediment Control Plans (Appendix C of the POD).

Following construction, the property will be returned to original contours to the greatest extent possible except at those locations where permanent changes in drainage will be



required to prevent erosion, scour, and possible exposure of the pipeline. Property boundary and monument markers that are removed will be replaced and remarked via civil survey based on the boundary surveys conducted and marked on the Alignment Sheets in Appendix A-1. The disturbed areas will be stabilized as outlined in the Restoration Plan included in Appendix H of the POD, which is consistent with JNF-FW-22, which requires the stabilization of all disturbed soil.

Those portions of the Project located primarily in upland terrain will employ conventional overland construction techniques for large-diameter pipelines. In the typical pipeline construction scenario, the construction contractor will construct the pipeline along the construction ROW using sequential pipeline construction techniques, including survey, staking, and fence crossing; clearing and grading; trenching; pipe stringing, bending, and welding; lowering-in and backfilling; hydrostatic testing; clean-up and restoration; and commissioning.

MVP will utilize 9 construction spreads to construct the pipeline. Of these, one is located on JNF lands. Table 6-1 provides the beginning and ending mileposts, length, and construction year for each of these spreads. The majority of the pipeline construction process will be accomplished using conventional open-cut methods, which typically include the steps described in the following paragraphs. The methods for accomplishing pipeline installation across wetlands and waterbodies, as well as other specialized construction procedures, are also described in the following paragraphs regarding special construction procedures.

Table 6-1. Pipeline Construction Spreads within the JNF and at the Weston and Gauley Turnpike Crossing

Spread	Begin Milepost	Ending Milepost	JNF Begin Milepost	JNF End Milepost	Construction Year
3 (C)	66.9		Weston and Gauley Turnpike Crossing		2018 - 2019
8 (G)	181.8	204.8	196.23	198.48	2018 - 2023
9 (G)	204.8	234.0	218.6	220.9	2018 - 2023

6.1.1.1 Surveying and Staking

The initial step in preparing the ROW for construction is the civil survey. A civil survey crew staked the outside limits of the construction ROW, the centerline location of the pipeline, elevations, highway and railroad crossings, access roads, and any temporary extra workspace. Environmentally sensitive areas (e.g., waterbodies and wetlands, special status species habitat, and historic properties) where the construction ROW is constricted was fenced and erosion and sedimentation measures were put into place. The "One Call" system of each state was contacted, and underground utilities (e.g., cables, conduits, and pipelines) were located and flagged.

6.1.1.2 Clearing and Grading

After the ROW was surveyed and easements were secured (for the permanent and temporary construction ROW and any existing ROW if necessary), the timber sale boundary was marked and the FS cruised the timber. ROW clearing within JNF was conducted in 2018. While the ROW on Sinking and Brush Mountains were cleared of



obstructions (i.e., trees and stumps, brush, logs, and large rocks) according to the FERC Plan, as outlined in MVP's Project-specific E&SCP, in the Timber Removal Plan (Appendix I of the POD), and as directed in the timber sale contract, timber remains where it fell on Peters Mountain. The ROW on Sinking and Brush Mountains was cleared to the width required for construction, but not more than specified on the pipeline alignment sheets and marked with paint in the field. These ROW widths indicated the maximum width necessary for construction, operation, and maintenance of the pipeline. Should MVP or its contractor clear or alter any areas outside of the boundaries of the pipeline ROW area, including ATWS areas, shown on the pipeline alignment sheets, MVP will work with the USFS to resolve the issue through its variance process or otherwise.

Non-merchantable brush and slash was retained on site to provide a level of erosion control until actual pipeline construction begins, at which time it will be windrowed to the edge of the ROW. Windrowing of non-merchantable brush and slash along the ROW will result in habitat for many types of wildlife, including rabbits and other small mammals, ruffed grouse, song birds and reptiles and provide food for insects. The windrows can also serve as escape cover from predators as well as locations for nesting and shelter from inclement weather. The windrows should be restricted to 8 feet tall, 20 feet wide, and 100 feet long with a 50-foot break between piles in order to provide fire breaks and wildlife crossings. Non-merchantable brush and slash can be utilized in downslope areas of the ROW and access roads to aide in soil stabilization and erosion control. Layering the brush and slash at the toe of a low-side slope along an access road provides soil stabilization, and erosion and sediment control. Layering of brush and slash can promote physical protection to the downslope areas of the ROW. Additionally, the layering can provide long-term support for revegetation in downslope areas of the ROW. Any remaining non-merchantable timber that cannot be windrowed will be chipped into trucks and removed from the site.

MVP will comply with the environmental protection measures and timing restrictions in the Migratory Bird Conservation Plan (Appendix V of the POD). MVP will also follow the eagle guidelines set out in the USFWS Bald Eagle Management Guidelines, such as not conducting any clearing or construction activities within 660 feet of active eagle nests, and avoid blasting or use of explosives within 0.5 mile of active nests or communal concentration areas. Any biologists utilized to inspect for Eagle nest on the JNF will be approve by the FS.

If fences (barbed wire, chain link, or other) occur along the construction ROW, then a fence crew will install temporary gates. The contractor's fence crew will install new posts to brace the areas on either side of the proposed cut to ensure that no damage occurs to other portions of the fence or wall. Temporary gates will be installed, if necessary, to prohibit or otherwise control public access across the ROW. These temporary fences and/or gates will remain closed at all times except as required for construction purposes. Following construction, all original gates and fences will be repaired or replaced as necessary.

Where needed for erosion control, and in accordance with JNF-FW-6, the FERC Plan, Project E&SCP, and the Restoration Plan included as Appendix H of the POD will be implemented along the construction ROW. Best management practices (BMPs), found in



the Erosion and Sediment control plans in Appendix C of the POD, will be properly maintained throughout construction and will remain in place until permanent erosion controls are installed and restoration is completed.

6.1.1.3 *Trenching*

To bury the pipeline underground, it will be necessary to excavate a trench. The trench will be excavated with a track-mounted backhoe or similar equipment. Explosives will only be used when necessary in areas where rock substrates are found at depths that interfere with conventional excavation or rock-trenching methods. A General Blasting Plan is included as Appendix J of the POD. Blasting is also further discussed in Section 6.1.2.1 below. Soils removed during trenching will be stockpiled in accordance with FS's requirement to segregate topsoil along the entire length of the ROW throughout the JNF.

Generally, the trench will be excavated at least 12 inches wider than the diameter of the pipe. The sides of the trench will be sloped with the top of the trench up to 12 feet across, or more, depending upon the stability of the native soils. The trench will be excavated to a sufficient depth to allow a minimum of three feet of soil cover between the top of the pipe and the final land surface after backfilling (minimum of 24 inches of cover will be provided in consolidated rock or in ditches). Wildlife fences will be used in coordination with escape ramps approximately every 50 feet as a deterrent on the edges of both sides of the ROW. Mountain Valley environmental inspectors will check the trench each morning prior to the start of work to ensure that any animals that are trapped in the trench are removed.

Excavated soils will typically be stockpiled along the ROW on the side of the trench (the "spoil" side) away from the construction traffic and pipe assembly area (the "working" side). Where the route is co-located with Mystery Ridge Road, the spoil generally will be placed on the same side of the trench as the existing road. Following the backfilling of a trench, MVP will complete final grading, topsoil replacement, and mulch the disturbed areas within seven days as directed by the revegetation discussed in the Erosion and Sediment Control Plans (Appendices C-1 and C-2 of the POD) and the restoration plan in Appendix H of the POD.

6.1.1.4 *Pipe Assembly*

Steel pipe for the pipeline will be procured in nominal double random lengths, or "joints," protected with an epoxy coating applied at the factory or at a coating yard (the beveled ends will be left uncoated for welding) and shipped to strategically located materials storage areas, or "pipe yards." Consistent with PHMSA requirements and standard industry practice, Mountain Valley employs measures to monitor and ensure that the integrity of its pipe coating is not compromised.

Mountain Valley conducted an evaluation of stored coated pipe segments in the summer of 2017. The photodegradation was measured on the Mountain Valley pipe and was determined to be equal to or less than the industry-expected rate. Mountain Valley implemented protective measures that substantially decreased the coating degradation on pipes stored for long periods in construction yards. When pipe is stored stacked in construction yards, the photodegradation occurs on the outer pipe joints in the stack that



are most exposed to sunlight. Mountain Valley took the proactive step of shuffling the pipe in the stacks to prevent the photodegradation from occurring at one location on the coated pipe surface. Mountain Valley will employ this measure as necessary until all pipe segments are installed. Additionally, in August 2018, Mountain Valley engaged the coating manufacturer in a discussion on the minimum coating thickness necessary to maintain the coating's integrity and sampled the average pipe coating thickness of its stored pipes. Mountain Valley determined that the coating thickness on its stored pipes remained above the manufacturers' minimum coating thickness recommendation.

The individual joints will be transported to the ROW by truck and placed along the excavated trench in a single, continuous line, easily accessible to the construction personnel on the working side of the trench, typically opposite the spoil side (pipe stringing). This will allow the subsequent lineup and welding operations to proceed efficiently.

The pipe will be delivered to the job site in straight joints. Most of the pipe for the pipeline segments across Brush Mountain and Sinking Creek Mountain was delivered to the construction ROW in 2018 and is stockpiled on site. The use of field controlled internal diameter fittings, in addition to the bending of pipe, will be required to allow the pipeline to follow natural grade changes and directional changes of the ROW. Prior to welding, selected joints will be bent in the field by track-mounted hydraulic bending machines.

Following stringing and bending, the joints of pipe will be placed on temporary supports, adjacent to the trench. The ends will be carefully aligned and welded together using multiple passes for a full penetration weld. Only qualified welders will be allowed to perform the welding. Automated welding techniques may be used in flatter areas if the terrain is suitable. Welders and welding procedures will be qualified according to applicable American Society for Mechanical Engineers, American Petroleum Institute (API), and 49 CFR Part 192 Standards.

To ensure that the assembled pipe will meet or exceed the design strength requirements, the completed welds will be visually inspected and tested for integrity using non-destructive examination methods, such as radiography (X-ray) or ultrasound, in accordance with API standards. Any weld found to be outside of the acceptance criteria will be repaired or cut out and re-welded.

Following welding, the previously uncoated ends of the pipe at the joints will be sandblasted to a near-white finish and epoxy coated. The coating on each individual pipe is inspected for damage and thickness before the pipe is installed in the trench. This testing is conducted by running a device called a "Holiday Detector" across the pipe. That device uses an electrical current to detect any defects in the coating. Any damaged coating or coating thin spots must be repaired prior to installation.

The completed section of pipe will be lifted off temporary supports and lowered into the trench by side-boom tractors or equivalent equipment. Prior to lowering the pipe, the trench will be inspected to ensure that it is free of rocks and other debris that could damage the pipe or the coating. Before the pipe is lowered into the trench, the pipe and trench will be inspected to ensure that the pipe and trench configurations are compatible. In rocky areas, if the bottom is not smooth, a layer of soil or sand may be placed on the



bottom of the trench to protect the pipe using a padding machine or excavator with a "shaker bucket," which separates rocks from satisfactory padding materials. Concrete-coated pipe or aggregate filled sacks will be used if required for negative buoyancy in areas of saturated soils.

As the pipe is lowered into the trench, the pipe is inspected again for coating damage that might have occurred during the act of lowering the pipe into the trench. The same process described above for "Holiday Detection" is followed. Any coating damage found during this inspection is repaired prior to backfilling. Once all coating damage is repaired, the trench is backfilled. Previously excavated materials are pushed back into the trench using equipment or backhoes. Where the previously excavated material contains large rocks or other materials that could damage the pipe or coating, clean fill will be used to protect the pipe. Limestone dust or sand, which is typically basic and will often aid in the cathodic protection of the pipeline, may be used as backfill material. The first 12 inches above the top of the pipe will be clean fill free of rocks from the excavation. The remaining fill of the trench will be the aggregate of the excavation material removed at the time of the excavation. However, if fill is necessary, it will be sand or limestone dust provided by local vendors as approved by MVP and the FS. Prior to replacing topsoil, excess soil will be distributed evenly on the ROW, only in upland areas, while maintaining existing contours. As noted above, topsoil will be segregated along the entire length of the ROW within the JNF and will be placed after backfilling the trench above the subsoil. Compaction during the backfilling process will be achieved by using excavators and bulldozers to track in the material. Following backfilling in agricultural land, grassland, and open land, a small crown may be left to account for any future soil settling that might occur. In wetlands, a crown will not be left in order to restore hydrology to pre-existing conditions.

6.1.1.5 Hydrostatic Test and Final Tie-In

Following backfilling of the trench, the pipeline will be hydrostatically tested to ensure that it is capable of safely operating at the design pressure. Baseline water samples will be taken at the source prior to water-up and prior to discharge. Test segments of the pipeline will be capped with test manifolds and filled with water and pressurized to a minimum of 1.1 to 1.25 times (based on location class) the designed operating pressure for a minimum of eight hours in accordance with USDOT requirements identified in 49 CFR Part 192 prior to being placed in service. Loss of pressure that cannot be attributed to other factors, such as temperature changes, will be investigated. Any area of concern detected will be repaired, and the segment will be retested.

Upon completion of the test, the water may be pumped to the next segment for testing. Test water will contact only new pipe. If chlorinated water from a municipal source is used for testing, the water will be retained in the pipe for a period of time to allow chlorination to off gas prior to discharge. Once a segment of pipe has been successfully tested and dried, the test manifold will be removed, and the pipe will be connected to the remainder of the pipeline. Desiccant will not be used to dry the pipe. MVP will implement Section VII of the FERC Procedures (Appendix H of the POD) regarding hydrostatic testing, as well as any specifications in individual state permit guidelines. No water from resources within the JNF will be used for hydrostatic testing, and no waters used during hydrostatic testing



will be discharged on FS or USACE managed lands. Water used for hydrostatic tests that occur on the JNF will be obtained from municipal sources.

6.1.1.6 *Cleanup and Restoration*

Post-construction restoration activities will be undertaken in accordance with the measures specified in the Restoration Plan (Appendix H of the POD). After a segment of pipe has been installed, backfilled, and successfully tested, the ROW, ATWS, and other disturbed areas will be finish-graded, and the construction debris will be disposed of properly. The surface of the ROW disturbed by construction activities will be returned as close as possible to original contours and to be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage will be required to prevent erosion, scour, and possible exposure of the pipeline. Temporary and permanent erosion and sediment control measures, including silt fencing, diversion terraces, and vegetation, will be installed at that time. Fences, gates, driveways, and roads that have been disturbed by the pipeline construction will be restored to original or better condition. More information on restoration is provided in Section 8.

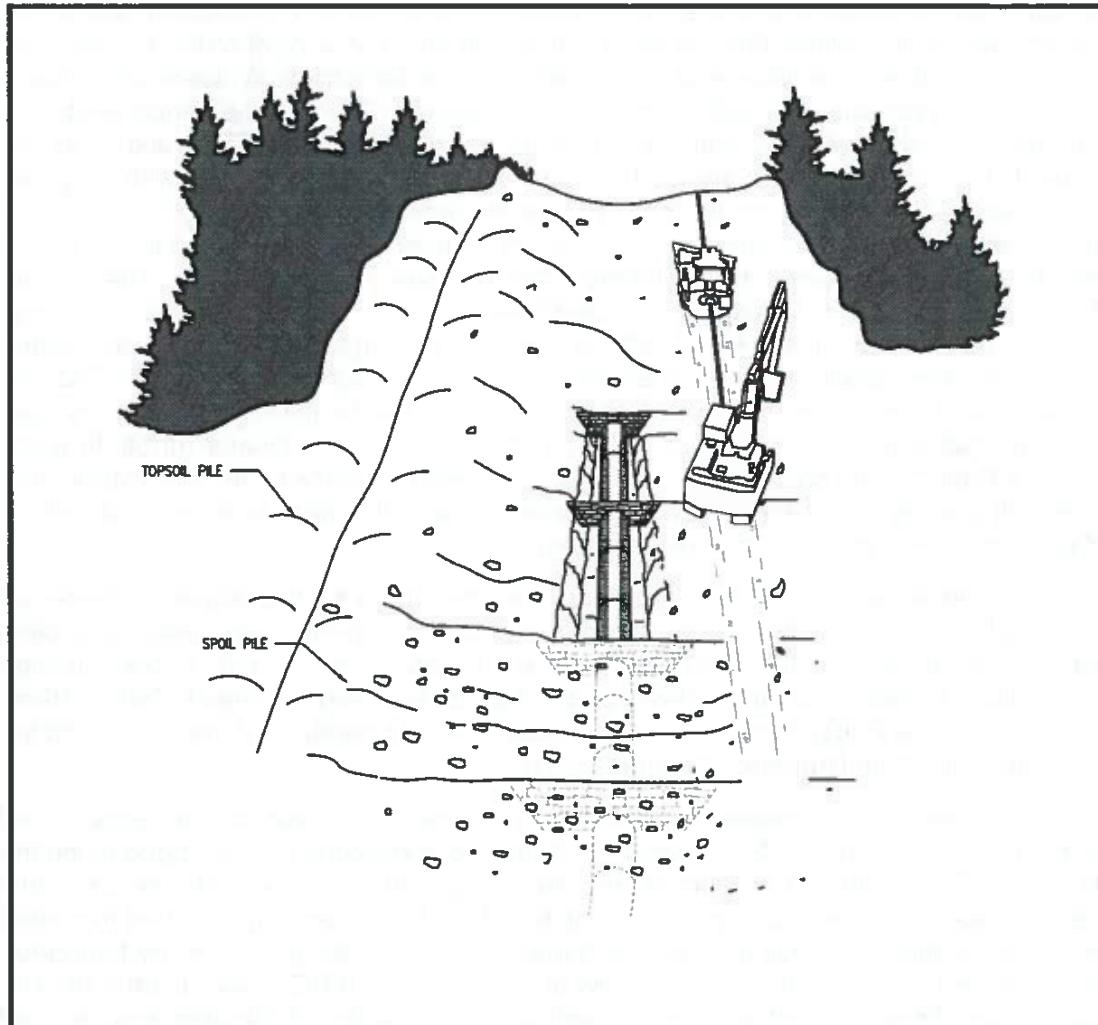
During construction, Mountain Valley will gather and dispose of trash created as a result of Project construction or by Mountain Valley employees and contractors each day.

6.1.1.7 *Construction in Rugged Terrain*

In mountainous areas where the pipeline will encounter slopes that typically exceed 30 degrees, MVP will employ special construction techniques. Appendix B includes figures that detail average slopes within the JNF. The elevation data were found using 3-meter digital elevation model files generated from flown LiDAR. Average slopes were calculated for each 0.1-mile interval along the pipeline centerline, and every 0.25-mile interval along the access road. In each 0.1-mile interval, the steepest data point was taken as the maximum slope.

ATWS located outside the 125-foot construction ROW for the pipeline on JNF may be utilized for staging equipment necessary for special construction techniques. Approximately one acre of ATWS will be utilized within the JNF for construction in rugged terrain, located along the pipeline alignment. In rugged terrain, temporary sediment barriers, such as silt sock and reinforced silt fences, will be installed during clearing to prevent movement of sediment off the ROW. In addition, temporary slope breakers will be installed during grading in accordance with the E&SCP to reduce water runoff or divert water to vegetated areas. Spoil piles adjacent to the trench will be protected by sediment barriers to keep excavated soils on the ROW.

Construction activities on rugged terrain will be similar to the typical construction; however, equipment will be tethered via winch lines to other equipment at the top of the slopes to ensure the safety of the construction personnel and surrounding areas. Equipment used for the construction activity will be suspended from a series of winch tractors to maintain control of the equipment and provide an additional level of safety (Figure 6-2). All construction equipment and their winch lines will be inspected prior to operation to ensure the equipment is operable and sound.



NOTES:

1. WINCHES MAY BE REQUIRED FOR MOVING EQUIPMENT AND MATERIAL, AND DURING CONSTRUCTION ON STEEP LONGITUDINAL SLOPES.
2. WINCHES WILL EITHER BE FIXED WINCHES OR TRACKED EQUIPMENT WITH WINCHES.
3. WINCHES WILL TYPICALLY BE REQUIRED FOR SLOPES STEEPER THAN APPROXIMATELY 30 DEGREES.
4. STOVE PIPE CONSTRUCTION WILL OCCUR ON SLOPES STEEPER THAN APPROXIMATELY 30 DEGREES.

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JL	DATE	02/23/17
CHECKED	RRR	DATE	02/23/17
APP'D	RJM	DATE	02/23/17
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:		DESIGN ENGINEERING	
PXXXX			



TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
STEEP HILL STOVE PIPE CONSTRUCTION
JEFFERSON NATIONAL FOREST
TOPSOIL SEGREGATION

DRAWING NO.	MVP-52	REV.
		0

Figure 6-2. Stove-Pipe Construction



Pipe joints will be stockpiled at the top or bottom of each slope. A side-boom tractor will be suspended from a winch that will carry single pipe joints or several welded joints (drag sections) up or down the slope and place them into the trenchline. Welders will connect the joint to the previous joint within the trench to assemble the pipeline. Once welding is complete, the welds will be visually and radiographically inspected. The weld joints will be hand coated with fusion-bonded epoxy coatings in accordance with required specifications. The coating on the pipe and at the weld will be inspected for areas of concern and repaired, if necessary. Sand trench breakers will be installed in the trench along the pipeline to prevent or slow the movement of water along the trench. The pipeline will be padded and the trench will be backfilled by equipment tethered to the winch tractors. The surface of the ROW will be restored to original contours to the extent practical, and permanent slope breakers will be installed in accordance with the E&SCP. Erosion control blankets or hydroseed, in lieu of mulch, will be installed on steep slopes to provide stabilization for vegetation to help control sediment and water runoff. In areas where the Project route crosses laterally across the face of a slope (side-hill construction), cut-and-fill grading may be required to establish a safe, flat work terrace which will be reclaimed as close as practical to original contours.

MVP will incorporate erosion and sediment control measures such as super silt fence, silt fence, sock filtration, erosion control socks, temporary and permanent water bars, ditch breakers, temporary mulch, and erosion control blankets as per Project design specifications based on slope as described in the Erosion and Sediment Control Plans (Appendix C of the POD), the Landslide Mitigation Plan (Appendix F of the POD), and the JNF Priority Site Plan (Appendix G of the POD).

On steep slopes, various measures will be taken in order to properly control erosion and sedimentation on the ROW. Spoil piles from trenching operations will be staged along the side of the ROW and will be compacted via rolling with dozers on site as additional material is added. Once a spoil pile is completed, it will be temporarily mulched to control washouts. Additionally, spoil piles will be separated at intervals of 50 feet by temporary water bars, which will serve to slow the flow of runoff down the ROW and divert it into No. 3 aggregate. Measures such as erosion control blankets and sock filtration may be used to stop rocks from rolling off of the ROW.

Within the trench, sand-filled sacks will be stacked across the width of the trench as necessary based on field conditions. This will permit water to slowly filter through without carrying large amounts of soil with it. Similarly, permeable trench breakers constructed of sand- or aggregate-filled sacks will be installed along the open ditch. Rock-fall protection measures such as rock fences, placement of concrete barriers, or creating catchment areas may be added where excavation is planned subjacent to steep slopes, as determined by the contractor. Once the area is stabilized, following construction, MVP will remove any temporary stabilization methods. Contours will be returned to pre-existing conditions to the extent practicable.

In addition to the measures taken on slopes to control erosion and sedimentation, trench drains will be installed on side slopes and steep slopes before the pipe is placed in order to channel water away from the ditch, and these drains will not be removed after construction is complete. These permanent drains will consist of perforated tile or pipe



surrounded with rock (1-inch stone or similar, which may be taken from excavated spoils) that will terminate at a riprap pad near the edge of the ROW. Geotechnical inspectors will evaluate the need for additional engineering controls based on the subsurface conditions exposed in the pipeline excavation; such engineering controls could include regrading adjacent areas, embedding the pipeline in a bedrock trench, installing drains, buttressing unstable slopes, reinforcing fill slopes with geosynthetics, or other stabilization measures as appropriate.

On side-hill construction, tree stumps and other organic material will be removed from backfill material along the ROW, as decomposing organic materials and organic soils tend to exhibit low shear strengths and may accumulate water, increasing the likelihood of a landslide. Special attention will be paid to ensure that natural drains alongside slopes are properly restored after construction activities are complete. In order to accomplish this, additional French drains or rock-lined channels may be constructed to efficiently convey water across or around the ROW. Where seeps and springs are observed in the cut slope, cutoff drains and/or transverse trench drains will be installed to prevent saturation of the backfilled material. Where possible, compaction on side-cut sections should be completed in 12-inch lifts using a sheep's foot roller.

Specific slope-stability considerations and construction measures are included in the *October 13, 2017 Landslide Mitigation Plan* as well as the *October 20, 2017 Site-Specific Design of Stabilization Measures in Selected High-Hazard Portions of the Route of the Proposed Mountain Valley Pipeline Project in the Jefferson National Forest* (Appendix F and G respectively). Additional landslide mitigation measures will be prescribed by geotechnical inspectors as subsurface conditions are revealed during construction.

Should topsoil be present on slopes that are greater than 50 percent, it will be segregated and replaced on these slopes unless site conditions require a variance. Regardless, these areas will be treated as soon as possible to minimize erosion potential. This may be accomplished by hydro-seeding the slope or covering the slope with jute erosion control matting (ECM). All rolled ECM products installed on FS lands will not contain monofilament mesh backing. As an alternative measure, hydraulically applied ECM (Earthguard Fiber Matrix, Flexterra Flexible Growth Medium, or equivalent) may be used in place of rolled ECM products. Should a variance be requested, a soil amendment will be added to prevent additional topsoil loss.

6.1.1.8 Wetland and Waterbody Pipeline Construction

One wetland, W-HH15, adjacent to Pocahontas Road was expected to be affected during the expansion of the road. However, now that Mountain Valley does not anticipate using or upgrading Pocahontas Road, impacts are no longer expected.

Crossing of jurisdictional waterbodies will be done in accordance with state and federal permits and the FERC Procedures. Table 6-2 below describes the proposed stream impacts. No streams are anticipated to be disturbed on USACE lands.

Construction across waterbodies within the JNF will be performed using a conventional bore method in order to reduce waterbody impacts and potential sedimentation impacts to the waterbodies within the JNF. All earth disturbance necessary to complete the



waterbody crossings, including spoil stockpiles, will remain within the previously authorized limits of disturbance. The USACE has confirmed that boring under small non-navigable streams can be performed in a manner that would not constitute a discharge of dredged or fill material. Stream crossing details specific to the JNF are included in Appendix K of the POD.

The conventional bore stream crossing method will involve excavation of a bore bit on either side of the stream deep enough to allow boring underneath the waterbody while maintaining a minimum of 5 feet of cover between the top of the pipeline and the bottom of the stream channel. Bore pits and construction activities will be located outside of the Ordinary High Water Mark of streams and there will be no in-water work or direct impact on the streams. The excavations will be sloped or shored in compliance with all local, state, and federal safety regulations. The bottom of the excavations will be leveled, and gravel placed to allow the track for a conventional unguided track-style auger bore employing a Robbins style rock bit. Sacrificial bore casing pipe will be pushed into the hole during the auger advancement towards the exit pit. Once the auger and bore casing pipe have reached the exit side, line pipe will be welded to the entry-side end of the casing and pushed through the hole with the boring machine in sections. The auger and sacrificial bore pipe will be cut up and removed on the exit side in manageable length sections until only the line pipe remains in the crossing. At this point, fittings and tie ins may be made to complete construction in the area, and the excavations then backfilled and the site returned to natural grade. The temporary bridge structures that currently cross streams within the JNF will remain in place until after the JNF final restoration work is completed.

It is anticipated that groundwater encountered during the boring operations will be sufficient to cool the auger head and that no additional water will be required. It is also anticipated that no drilling fluids or additives of any kind will be used. However, in the unlikely event additives are deemed necessary based on conditions, only non-petrochemical based, nonhazardous, National Science Foundation (NSF)-60-compliant additives would be utilized, and the ecotoxicity of each additive to the identified toxicity for relevant biotic receptors (e.g. fish) will be indicated to the extent practicable. If the use of additives is required, Safety Data Sheets will be provided to the JNF.

Groundwater infiltration into the bore pits is likely depending on the local soil properties and groundwater level at the time of construction, and it is anticipated that bore pits for the stream crossings within the JNF may require significant dewatering measures due to the depth of the pits. Groundwater infiltration is typically controlled by sealing the bore pit walls with sheet piling or trench boxes, and by using dewatering pumps to remove groundwater that does enter the pits. See Section 6.1.2.4 of this POD below for further discussion of bore pit dewatering.

**Table 6-2. Waterbody Impacts within the JNF**

Stream ID	NHD Stream Name <u>a/</u>	County	FS Flow Regime <u>b/</u>	Water Type <u>c/</u>	Impact Type	Top of Bank Width (ft)	Temp. Linear Feet Impact (ft)	Perm. Linear Feet Impact (ft)	Designation <u>d/</u>	Water Quality <u>e/</u>
S-PP22	UNT to Craig Creek	Montgomery	Intermittent	RPW	Pipeline ROW	2.5	0	0	-	N/A
S-PP21	UNT to Craig Creek	Montgomery	Perennial	RPW	Pipeline ROW	4	0	0	-	N/A
S-PP20	UNT to Craig Creek	Montgomery	Perennial	RPW	Pipeline ROW	6	0	0	-	3A
S-HH18	UNT to Craig Creek	Montgomery	Perennial	RPW	Pipeline ROW	6	0	0	-	3A

Notes:

a/ For identified streams without a NHD name, the identified stream was given the name, "Unnamed Tributary (UNT)", or the first named receiving waterbody. b/ FS flow regime is based on FS land management procedures and may differ from USACE flow regime.

c/ RPW = Relatively Permanent Waters;

d/ Trout Waters - Cold Water Streams Survey (CWSS) - trout streams as determined by Virginia Department of Wildlife Resources available at:
[https://www.dgf.virginia.gov/gis/data/download/](https://www.dgif.virginia.gov/gis/data/download/);

Anadromous Fish Use Areas - as determined by Virginia Department of Wildlife Resources available at:
<https://www.dgf.virginia.gov/gis/data/download/>;

Tier 3 - Exceptional State Waters (Tier III) list available at:
[http://www.deq.virginia.gov/Programs/Water/WaterQuality/InformationTMDLs/WaterQualityStandards/ExceptionalStateWaters\[TierIII\].aspx](http://www.deq.virginia.gov/Programs/Water/WaterQuality/InformationTMDLs/WaterQualityStandards/ExceptionalStateWaters[TierIII].aspx)

e/ Water Quality/Quantity data are taken from existing sources including: EPA STORE (<https://www.epa.gov/watertadata/storage-and-retrieval-and-water-quality-exchange>) and VA DEQ Final 2014 305(b)/303(d) Water Quality Assessment Integrated Report available at -
[http://www.deq.virginia.gov/Programs/Water/WaterQualityAssessments/2014305\(b\)/303\(d\)/IntegratedReport.aspx](http://www.deq.virginia.gov/Programs/Water/WaterQualityAssessments/2014305(b)/303(d)/IntegratedReport.aspx)

- 3A - Category 3A (Indeterminate - Waters needing additional information, water was not previously listed as impaired) from VA DEQ Final 2014 305(b)/303(d) Water Quality Assessment Integrated Report.

- 3B - Category 3B (Indeterminate - Waters needing additional information, waters will be prioritized for follow-up monitoring as resources allow) from VA DEQ Final 2014 305(b)/303(d) Water Quality Assessment Integrated Report.

-N/A - Publicly available water quality/quantity data was not available from the sources listed above.



6.1.1.9 Typical Road Crossings

During construction on FS Property, motorized access will be maintained along Pocahontas (FR #972), Mystery Ridge (FR #11080), and Brush Mountain (FR #188) Roads at all times to FS personnel, other personnel authorized by the FS, and emergency response officials. The pipeline will be parallel to Mystery Ridge Road and will utilize it as part of our ROW in some locations. Mystery Ridge Road will also be crossed by the Pipeline one time. Mountain Valley will also cross Brush Mountain Road. While Mountain Valley open cuts and crosses Mystery Ridge and Brush Mountain Roads, the roads will be closed to all through traffic for approximately five days. Should access for the FS or emergency purposes be necessary during those five days, the disturbed area will be covered with a steel plate. Following construction each day, the open trench across Brush Mountain Road (FR #188) will be covered over with a steel plate to allow for passage as necessary. At points of access to the ROW from hard-surfaced roads, a stone pad will be installed as a construction entrance to control mud and dirt tracking onto the highway. Most of the smaller unpaved roads and drives will be crossed by open trenching and then restored to pre-construction conditions or better. If an open-cut road requires extensive construction time, provisions will be made for temporary detours or other measures to allow safe traffic flow during construction. The pipeline will be buried to a depth of at least three feet below the road surface and will be designed to withstand anticipated external loadings such as logging trucks and other heavy equipment. Following construction each day, any open trench will be covered over with a steel plate to allow for passage as necessary.

6.1.1.10 Trail Crossings

The Weston and Gauley Turnpike crossing was completed in 2018 using a conventional bore crossing method. The ANST will be crossed using a trenchless crossing method to bore underneath the trail with no surface disturbance. Should the first attempt of the bore crossing be unsuccessful, MVP will implement the measures outlined in the Contingency Plan for the Proposed Crossing of the Appalachian National Scenic Trail (Appendix E of the POD). Crossing profile drawings are included in Appendix A-2 of the POD.

To complete the crossing, two pits will be excavated, one on each side of the ANST. A boring machine will be lowered into one pit, and a horizontal hole will be bored to a diameter slightly larger than diameter of the pipe at the depth of the pipeline installation. The pipeline section will then be pulled through the bore to the opposite pit.

6.1.1.11 Typical Topsoil Segregation

MVP will segregate topsoil along the entire length of the ROW throughout the JNF. Should topsoil be present on slopes that are greater than 50 percent, it will be segregated and replaced on these slopes unless site conditions require a variance. Regardless, these areas will be treated as soon possible to minimize erosion potential. This may be accomplished by hydro-seeding the slope or covering the slope with jute ECM. All rolled ECM products installed on FS lands will not contain monofilament mesh backing. As an alternative measure, hydraulically applied ECM (Earthguard Fiber Matrix, Flexterra Flexible Growth Medium, or equivalent) may be used in place of rolled ECM products.



Should a variance be requested, a soil amendment will be added to prevent additional topsoil and organic matter loss.

6.1.2 Special Construction Procedures

6.1.2.1 Blasting

MVP will minimize the amount of blasting required to the extent practicable. Where unrippable subsurface rock is encountered, blasting for ditch excavation and the conventional bore pit on the southeast slope of Peters Mountain may be necessary. Where competent sandstone bedrock occurs in the stream bed, blasting may be used to reduce bedrock so that the trench can be excavated. However, MVP has extensive experience with pipeline installation in the Dunkard, Monongahela, and Conemaugh formations (Permian to Pennsylvanian Age clastic sedimentary bedrock) found in the Appalachian Plateau geologic province of northern West Virginia (e.g., Wetzel County). These geologic formations consist of cyclic sequences of shale, siltstone, sandstone, thin limestone beds, nonpersistent coal, and other accessory rock types. These formations are similar in nature to the Ordovician to Mississippian clastic formations found in the Valley and Ridge geologic province of southwestern Virginia. MVP routinely rips these clastic sedimentary formations without the need for blasting. This suggests that mechanical ripping should be sufficient for bedrock trenching on NFS property without the use of blasting. However, Table 6-3 below lists areas within the JNF where blasting may be necessary.

Table 6-3. Bedrock Rippability and Possible Extent of Blasting on JNF

Between Mile Posts		Discussion	Rippability Assessment	Likely to require blasting?
196.35	-	Enter NFS property	n/a	n/a
196.35	196.4	Peters Mountain ridgeline. Steeply dipping (southeast) thin-to-medium bedded sandstones outcrops, highly jointed.	Rippable due to outcrop orientation and jointing.	Possible
196.4	196.45	Bore pit	Bore pit staging will require more rock excavation than trenching. May encounter unweathered hard rock that requires blasting to support excavation.	Possible
196.45	197.0	Alignment primarily underlain by unconsolidated colluvial and ancient debris flow deposits	Rippable due to unconsolidated deposits overlying the upper reaches of weathered bedrock.	No
197.0	197.8	Thin overburden mantle overlying highly jointed sandstone bedrock.	Rippable due to outcrop orientation and jointing.	No
197.8	198.2	Leave NFS property	n/a	n/a
198.2	198.35	Re-enter NFS property. Underlain by unconsolidated colluvial and ancient debris flow deposits	Rippable due to unconsolidated deposits overlying the upper reaches of weathered bedrock.	No
198.35	218.53	Leave NFS property	n/a	n/a

**Table 6-3. Bedrock Rippability and Possible Extent of Blasting on JNF (continued)**

Between Mile Posts		Discussion	Rippability Assessment	Likely to require blasting?
218.53	218.65	Re-enter NFS property. Sinking Creek Mountain ridgeline. Steeply dipping (southeast) thin-to-medium bedded sandstones outcrops, highly jointed.		Rippable due to outcrop orientation and jointing.
218.65	218.8	Sandstone rock-block slump covered by overburden mantle.		Rippable due to unconsolidated deposits overlying the upper reaches of weathered bedrock.
218.8	219.35	Alignment underlain by unconsolidated colluvial and ancient debris flow deposits		Rippable due to unconsolidated deposits overlying the upper reaches of weathered bedrock.
219.35	219.7	Leave NFS property		n/a
219.7	220.72	Re-enter NFS property. Steeply dipping, highly jointed Brallier formation fine sandstone, siltstone, shale observed at stream crossing near Mile Post 219.7.		Rippable due to outcrop orientation and jointing, and rock character.
219.72	220.7	Alignment ascends north slope of Brush Mountain crossing overburden mantle that overlying Brallier siliciclastic bedrock to the ridge line where Price Formation sandstone outcrops.		Rippable due to unconsolidated deposits overlying the upper reaches of weathered bedrock. Thin-to-medium-bedded ridge-forming sandstones are steeply dipping and highly jointed and considered rippable.
-	220.7	Leave NFS property		n/a

If blasting is required on the JNF, MVP is committed to taking measures to prevent damage to underground structures (e.g., cables, conduits, and pipelines) or to springs, water wells, or other water sources. Blasting mats or padding will be used as necessary to prevent the scattering of loose rock. All blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified. Any blasting will be coordinated closely with the FS.

MVP will utilize blasting sirens, post warning signs near blasting zones, and post public announcements on FS-JNF existing information kiosks, any new information kiosks determined necessary by the FS, and the FS-JNF website (Alerts & Warnings), as permitted by the FS. MVP will also provide the blasting notices to the BLM to post on their public notification sites as appropriate. All blasting will be conducted in accordance with the General Blasting Plan (Appendix J), which includes providing notifications to the FS and BLM 24 hours prior to any blasting activities on federal lands. Pre- and post- blasting structural surveys will be conducted of occupied structures, water supply wells, and water supply springs that will be specified in the Blasting Plan. Avian survey teams will search for nests prior to blasting activities during nesting season (April 1 – August 31). If an active nest is located within the blasting area, a 100-foot buffer area will be marked, and blasting



will not occur within the 100-foot buffer until the nest is no longer active. Most nesting habitat will have already been cleared prior to the need to blast.

6.1.2.2 Stove-Pipe Construction

On slopes steeper than 30 degrees (approximately 58 percent slope), the pipeline will be installed via a "stovepiping" method (see Figure 6-2). The stove-pipe method entails excavating a trench long enough to install a pre-welded drag section of up to five joints of pipe, lowering into the trench, and then welding the pipe in the trench. Following welding, inspection, and coating, the welded drag section of pipe is backfilled before moving on to the next section. This process is performed for each successive drag section up the slope. This construction technique will reduce the length of pipe that will be handled at any one time and minimize the amount of open trench on steep slopes. The general construction and restoration methods that will be applied during stove-pipe construction will be similar to those described above for rugged terrain.

6.1.2.3 Karst Area

The Mountain Valley Karst Specialist Team (KST), comprised of experts with decades of experience studying karst hydrogeology of Virginia and West Virginia, completed a Karst Hazards Assessment (KHA) (Resource Report #6; most recently updated February 2017) that included a desktop review of mapping from the United States Geological Survey, West Virginia Department of Environmental Protection, and Virginia Department of Mines, Minerals, and Energy and other sources. The KHA also included field verification in known karst areas underlying the proposed alignment and related construction components.

No karst terrain was observed in the vicinity of the Weston and Gauley Turnpike crossing.

The Geologic Map of Giles County, Virginia (Rader and Gathright; 1986) published by the Virginia Department of Mines, Minerals, and Energy, indicated the Silurian age Tonoloway Limestone and Keefer Sandstone (undivided) are present in the JNF where traversed by the proposed alignment. The Tonoloway Limestone is a laminated limestone with thin interbedded calcareous shale and siltstone. Being comprised of carbonate mineralogy, the Tonoloway Limestone has the potential for karst formation. However, literature review conducted for the KHA (referenced above) and field investigation conducted by the KST did not identify surficial karst features on JNF lands. Nonetheless, Mountain Valley will employ safeguards during construction in potential karst areas in the event that subsurface karst features are encountered.

The Mountain Valley Karst Mitigation Plan (KMP) (Appendix L of the POD) includes inspection and mitigation measures to be enacted if a subsurface karst feature is encountered during construction. As part of the KMP, the Mountain Valley KST will be on-site during all phases of construction in karst terrain to document the protection of known karst features, and to monitor for and mitigate if necessary newly observed karst features.

6.1.2.4 Trench and Bore Pit Dewatering

In most cases, trench dewatering will be limited to the removal of storm water and shallow ground water in the pipe trench excavated in upland locations or the bore pits excavated on either side of waterbody crossings. In saturated wetlands, it would not be practical to



attempt to dewater the trench, since the groundwater level is at or near the ground surface. In those locations, the pipe may be concrete-coated or weighted with aggregate filled sacks to overcome buoyancy in the flooded trench.

For the trench in uplands, storm water will typically be removed from the trench prior to lowering the pipe into place. The storm water will be pumped from the trench to a location downgradient of the trench. The trench will be dewatered in a manner that does not cause erosion and does not result in silt-laden water flowing into any waterbody or wetland. The storm water will be discharged to an energy dissipation/filtration dewatering device, such as a straw bale structure (see plate 3.26-3 on page C-3-3 of Appendix C-3 of the POD or an equivalent design approved by VADEQ). Heavily silt-laden water may first be passed through a filter bag (see typical drawing MVP-ES2 on page C-3-5 of Appendix C-3 of the POD or an equivalent design approved by VADEQ). The dewatering structure will be removed as soon as possible after completion of the dewatering activities. Trench breakers (ditch plugs) will be used where necessary to separate the upland trench from adjacent wetlands or waterbodies to prevent the inadvertent draining of the wetland or diversion of water from the waterbody into the pipe trench.

For the bore pits excavated for the waterbody crossings, groundwater will be pumped from the bore pits with standard water pumps to maintain a safe working environment within the pits during the crossings. Pumping may need to occur 24 hours a day depending on the water level within the pits. The pumps will discharge into temporary dewatering structures that will be built in compliance with both FERC and VADEQ requirements similar to trench dewatering in uplands as described above (and shown on plate 3.26-3 and typical drawing MVP-ES2 of Appendix C-3 of the POD or an equivalent design approved by VADEQ) and sized according to anticipated water volumes. Groundwater pumped from the bore pits will first be discharging through a sediment filter bag. The dewatering structure will be placed in a well vegetated area to increase the retention and filtration of the water as approved by the JNF. The pumping rates will be monitored and modified as needed to ensure that the structure does not overtop, and water is properly filtered. Using this structure will greatly reduce the amount of turbid water discharged from the work area and potentially entering wetlands or surface waters. If at any time a temporary dewatering structure is required outside of the previously approved limits of disturbance, MVP will obtain permission from the JNF or private landowner prior to building the structure.

6.1.2.5 Winter Construction

MVP has developed a Winter Construction Plan (Appendix M of the POD), which identifies BMPs for construction activities during snow accumulation. MVP will stop working in winter if weather conditions occur that are deemed unsafe to perform pipeline construction. Inspections will occur within 24 hours of each 0.5 inch of rainfall or snow melt. MVP will ensure the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in the greater environmental impacts. Routine maintenance repairs will occur within 72 hours.

As necessary during snow accumulation, snow will be removed from construction work areas to expose soils for grading and excavation. Snow removal will be limited to active



construction areas and areas needed to maintain access to the construction ROW. Snow will be bladed or pushed to the edges of the ROW with a motor-grader, snowplow, or bulldozer fitted with a "shoe" to minimize impacts on underlying soils and vegetation and stockpiled within the ROW. Snow will not be bladed off the ROW. Snow removal equipment will access the Project areas from approved access roads and will operate from within the construction ROW. When snow accumulation is more than one foot, it will be removed from the working and spoil sides of the construction ROW and the trench prior to topsoil segregation and grading to prevent mixing of snow with excavated spoil. If topsoil is saturated with water or frozen during excavation, it will not be segregated. Erosion and sediment control devices and diversion berms will be installed where needed to control snow and melting runoff.

Pickup trucks with front-mounted blades will plow access roads. Removed snow will not mix with sidecast stored soils. No additional temporary workspace has been identified for snow storage.

6.2 Work Force

Based on current discussions with qualified construction contractors, MVP estimates that local workers will account for approximately 25 percent of construction jobs for each spread for the duration of the Project. The remaining 75 percent of the construction workforce will consist of non-local workers. Local workers are defined here as those who normally reside within daily commuting distance of the work sites. The portion of the Project that crosses the JNF occurs along Spread G, which MVP anticipates will have an average employment level of about 289 non-local workers and a 96 local workers, for a total average of about 385 workers, and a peak employment of about 600 non-local workers and 200 local workers, for a total of about 800 workers, during construction.

The number of vehicles that will be used to move construction personnel to the Project site on the JNF is not known at this time. This will be determined by the construction contractor at the time of construction. The contractors will be encouraged to utilize buses and/or multi-passenger vehicles to limit the amount of traffic to a minimum.

6.3 Communication Procedures and Notification Protocols

Timely, clear, and effective communication between Mountain Valley, FS, BLM, FERC, and contractors on-site is a critical component to the success of the Project. Communication protocols related to environmental inspection, compliance monitoring, reporting requirements, and Project variance requests are described further in Appendix N – Environmental Compliance Management Plan to this POD.

6.4 Roles and Responsibilities

During construction, MVP will provide contractors with all Project design documents, including environmental alignment sheets, and copies of all applicable federal, state, and local permits. Construction will be supervised by a company Chief Inspector. MVP will file weekly status reports with FERC and the FS that address construction and restoration activities on the JNF and to the USACE when activity is occurring in the area of Burnsville



Lake and the Weston and Gauley Turnpike. These weekly reports will be available to the public on the FERC eLibrary system.

MVP has funded FERC third-party compliance monitoring program during implementation of the Project. Under this program, a contractor is selected by, managed by, and reports solely to the FERC staff to provide environmental compliance monitoring services. The FERC Compliance Monitor provides daily reports to FERC and the FS on compliance issues and makes recommendations on how to deal with compliance issues and construction changes, should they arise. In addition to this program, FERC staff also conduct periodic compliance inspections during all phases of construction and throughout restoration, as necessary.

MVP has also funded a FS third-party compliance monitoring program during implementation of the Project. Under this program, a contractor is selected by, managed by, and reports solely to the FS staff to provide environmental compliance monitoring services. The FS Compliance Monitor provides daily reports to the FS on compliance issues and makes recommendations on how to deal with compliance issues and construction changes, should they arise. In addition to this program, FS staff also conduct periodic compliance inspections during all phases of construction and throughout restoration, as necessary.

This section describes the roles and responsibilities of each party. See Appendix N, the Environmental Compliance and Monitoring Plan for additional information including variance approval, notices to proceed, and stop-work authority.

6.4.1 Federal Energy Regulatory Commission

FERC has jurisdiction for the construction and operation of the Project pursuant to Section 7(c) of the Natural Gas Act, 15 United States Code § 717f(c), and 18 CFR Parts 157 and 284 (2015). FERC oversees the construction and operation of approximately 303 miles of new interstate natural gas pipeline, three new compressor stations, and other facilities located in 17 counties in West Virginia and Virginia. MVP is required to comply with the environmental conditions contained in the FERC Certificate. FERC has assigned a project manager to oversee construction of the Project. The project manager relies on the Compliance Inspection Contractor (CIC) (discussed further in Section 6.4.1.3 below) for day-to-day compliance review.

6.4.2 U.S. Forest Service and U.S. Army Corps of Engineers

There are 3.5 miles of the pipeline route that cross the JNF managed by the FS and 60 feet that cross the Weston and Gauley Turnpike administered by the USACE. The agency-designated Authorized Officers provide oversight for the Project on NFS and USACE lands. The Authorized Officers are responsible for administering and enforcing ROW Grant provisions. The Authorized Officers' designated representatives are responsible to ensure stipulations and mitigation measures included in the POD are adhered to during Project construction, operation, and maintenance. The Authorized Officers' representatives also are responsible for resolving any conflicts that arise relating to the Project. On the JNF, compliance during construction is monitored by the compliance monitors designated by the Authorized Officer. If a potential cultural resource is discovered, the FS compliance monitor will report the discovery to the MVP



Environmental Inspector and implement the protocols in the Project's Plan for Unanticipated Historic Properties and Human Remains for West Virginia and Virginia (Appendix O of the POD) and Plan for Unanticipated Discovery of Paleontological Resources for West Virginia and Virginia (Appendix P of the POD).

6.4.3 Compliance Inspection Contractor

The CIC represents the FERC. The FS designates an Authorized Officer to oversee the Project within the JNF. The CIC is designated during the construction and restoration phases of the Project to ensure (1) compliance with permit requirements and (2) that environmental impacts associated with the Project do not exceed estimates disclosed in the Environmental Impact Statement and approved by FERC and BLM in their authorizing documents. The FS designates its own Authorized Officer with authority over the Project activities on JNF lands.

The CIC is selected by and works under the direct supervision and control of FERC. FERC and the CIC coordinate with the FS. The CIC will not take any direction with respect to the manner of conducting monitoring from MVP or its construction contractor or Environmental Inspector. The CIC's primary role is to observe work activities; verify, document, and monitor compliance; and bring non-compliant situations to the attention of the appropriate party and offer recommendations on how to prevent non-compliance prior to commencement of work. The CIC will not direct activities of the MVP construction contractor, but will notify MVP's Environmental Inspector or Chief Inspector, who will then direct MVP's construction contractor.

The CIC provides a team that consists of full-time on-site field inspectors and office-based support. This includes one full-time inspector per construction spread, which includes one inspector for the portion of the project within JNF. The CIC field inspectors will have appropriate experience and training related to FERC-regulated natural gas pipeline construction. During active construction the CIC will provide weekly reports to FERC on compliance issues and make recommendations to the FERC Project Manager on how to deal with compliance issues and construction changes, should they arise, and will provide a copy to the FS of reports applicable to NFS lands and a copy to the USACE of reports applicable to USACE lands. If minor variances to the FERC Certificate are required due to field conditions, as the field representative to FERC, the CIC has limited authority to review and approve minor variances to the FERC Certificate in the field. Within the JNF, the CIC will coordinate with the FS designated Authorized Officer regarding any minor variances to the FERC Certificate to ensure consistency with all requirements applicable on NFS lands. The CIC does not have authority to approve field variances to the ROW Grant Authorization on NFS lands.

The CIC will be in place full time during active construction and active ROW restoration. Once the ROW and all construction work space is regraded, stabilized, seeded, and permanent erosion controls installed, all restoration punch-list items are completed, and the construction equipment and crews are removed from the Project, the CIC contract will be terminated. Post-construction inspections to monitor revegetation and ensure restoration success on JNF lands will be conducted by the FS Authorized Officer as frequently as deemed necessary by the FS.



6.4.4 Mountain Valley Pipeline

MVP is responsible for the administration of the ROW and coordination between the Project Engineer and construction contractor. MVP and its construction contractor are responsible for all activities associated with the construction, operation, and maintenance of the pipeline and ancillary facilities in a manner that complies with the conditions outlined in the FERC Certificate, BLM Right-of-Way Grant, and other authorizations listed in Table 6-5, as applicable. MVP will be the ultimate authority for their contractors.

The Project Construction Manager is responsible for ensuring that MVP's approved plans, procedures, and designs, and all applicable health, safety, and environmental regulations are implemented and followed during all phases of construction of the pipeline and ancillary facilities. The Project Construction Manager will coordinate with contractors to answer technical questions and respond to requests for information that arise during these activities. The Project Construction Manager is also responsible for maintaining accurate as-built information, auditing field reports, and completing all required reports and summaries for the Project.

An electronic index of current appendices and supporting documents will be kept up to date by MVP and housed on the Project SharePoint site managed by MVP. It is the responsibility of all involved personnel from all involved parties to ensure that they are utilizing the current versions of all documents. The POD and all appendices and supporting documents will be dated on each page with at least month and date of development.

To help ensure construction activities are conducted in a manner that complies with all federal, state, and local regulations, MVP will contract a multidisciplinary team of environmental inspectors and specialists (i.e., the environmental inspection contractor) to work jointly and cooperatively with the FS Authorized Officer, the construction contractor, and the CIC.

6.4.5 Construction Contractor

MVP has retained one prime construction contractor who is responsible for the construction, testing, and restoration of the pipeline right-of-way on JNF Lands. A second prime contractor was responsible for construction, testing, and restoration activities on the ROW adjacent to and boring under USACE managed lands. The construction contractors are responsible for addressing restoration activities, as well as agreed upon environmental protection stipulations.

6.4.6 Environmental Inspection

At least one MVP Environmental Inspector will be hired for the portion of the Project on the JNF, who will work with the CIC, and whose duties will be consistent with Section II.B of FERC Plan, MVP's Environmental Compliance Management Plan (Appendix N), and the requirements of the BLM Right-of-Way Grant. The Environmental Inspector will be a full-time position, separate from other activity inspectors. The Environmental Inspector will be responsible for ensuring that MVP complies with its construction and environmental mitigation plans, all environmental conditions of the FERC Order, the BLM Right-of-Way Grant, the POD, and the environmental conditions of other relevant federal



and state authorizations. The Environmental Inspector will have "stop-work" authority and will be empowered to take corrective actions to remedy instances of non-compliance. In addition, the Environmental Inspector will conduct environmental and cultural resource training for company employees, maintain records, and write reports.

Specific Environmental Inspector responsibilities include:

- Inspecting construction activities for compliance with the requirements of the Plan of Development, the FERC Procedures, the environmental conditions of the FERC Order, the BLM Right-of-Way Grant, other environmental authorizations, and environmental requirements;
- Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
- Verifying that the limits of authorized construction work areas and locations of access roads are visibly marked before clearing and maintained throughout construction;
- Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
- Identifying erosion/sediment control and soil stabilization needs in all areas;
- Ensuring that the design of slope breakers will not cause erosion or direct water into sensitive environmental resource areas, including cultural resource sites, wetlands, waterbodies, and sensitive species habitats;
- Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into sensitive environmental resource areas, including wetlands, waterbodies, cultural resource sites, and sensitive species habitats; stopping dewatering activities if such deposition is occurring and ensuring the design of the discharge is changed to prevent reoccurrence; and verifying that dewatering structures are removed after completion of dewatering activities;
- Ensuring that subsoil and topsoil are tested in FS, agricultural, and residential areas to measure compaction and determine the need for corrective action;
- Advising the Chief Inspector when environmental conditions (such as wet weather or frozen soils) make it advisable to restrict or delay construction activities to avoid topsoil mixing or excessive compaction;
- Ensuring restoration of contours and topsoil;
- Ensuring that erosion control devices are properly installed to prevent sediment flow into sensitive environmental resource areas (e.g., wetlands, waterbodies, cultural resource sites, and sensitive species habitats) and onto roads, and determining the need for additional erosion control devices;
- Inspecting and ensuring the maintenance of temporary erosion control measures at least:
 - on a daily basis in areas of active construction or equipment operation; and



- every 4 business days (per VADEQ) with no construction.
- Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts;
- Ensuring shrubs and small trees planted during ROW restoration have sufficient survival and growing rates to meet goals and objectives for scenery within five years;
- Keeping records of compliance with the environmental conditions of the FERC Order, the BLM Right-of-Way Grant, and other federal or state environmental authorizations during active construction and restoration;
- Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase; and
- Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with FERC and FS requirements.

The Environmental Inspector will be supported in the field by geological, cultural, and biological resource specialists, as necessary, to ensure compliance with permit conditions related to protected and sensitive biological and cultural resources. The relationship of roles and responsibilities of the various parties involved in the construction, operation, and maintenance of the Project is summarized in Table 6-4.

Table 6-4. Relationship of Roles and Responsibilities of Various Parties

Party(ies)	Responsibilities
FERC, USACE, and BLM	Monitoring compliance with the provisions of the FERC Certificate and BLM Right-of-Way Grant
CIC	On-site compliance inspection and monitoring for FERC and the USACE
FS Authorized Officer	Administering and enforcing Right-of-Way Grant provisions on NFS lands
MVP	Upholding, documenting, and managing environmental compliance with the terms specified in the FERC Certificate and the BLM Right-of-Way Grant; the POD; agency agreements; and all federal, state, and local authorizations
Construction Contractor	Implementation of and compliance with the POD, the FERC Certificate, the BLM Right-of-Way Grant, and all other permit requirements during construction and restoration
Environmental Inspector	Ensuring permit compliance, ordering corrective actions, and protecting sensitive biological and cultural resources, under the direction of MVP

6.5 Access to and Along Right-of-Way during Construction

MVP does not intend to build any new roads on FS property. Construction and operations traffic will not be permitted to use FR# 972 Pocahontas Road, FR#11080 Mystery Ridge Road, or FR#188 Brush Mountain Road. Mountain Valley construction and operation personnel and equipment will be required to access the ROW via crossings from public roads. Access to the bore pit on the West Virginia side of the ANST will occur from Green Valley Road. Equipment will travel the ROW from Green Valley Road to the proposed bore pit location. Mountain Valley will utilize several ROW access points from Rogers Road on the south side of Peters Mountain. Equipment will travel the ROW from Rogers



Road onto JNF lands. In addition, Mountain Valley will utilize a previously approved access road to enter the ROW from Cumberland Gap Road. Equipment will travel the ROW from that access point onto JNF lands on top of Sinking Creek Mountain. An additional access point at Craig Creek Road will be utilized to access the ROW on both Sinking Creek and Brush Mountains. Traffic and transportation management activities on these lands will conform to the standards and guidelines contained within the LRMP of the JNF for road use, maintenance, and construction. FS roads serve a variety of needs including recreation access, fire protection, vegetation and wildlife management, adjacent private land access, and energy and mineral development. The Project's traffic and transportation management activities, and their compliance with the LRMP, are discussed below and in the Project Flagging, Fencing, and Signage Plan (Appendix Z).

6.5.1 Road Closures

During construction on FS property, motorized access will be maintained along Pocahontas (FR #972), Mystery Ridge (FR #11080), and Brush Mountain (FR #188) roads at all times to FS personnel, other personnel authorized by the FS, and emergency response officials. The pipeline will be parallel to Mystery Ridge Road and cross the road one time. Mountain Valley will also cross Brush Mountain Road. Should access for FS or emergency purposes be necessary during crossing of the roads, the disturbed area will be covered with a steel plate. Following construction each day, the open trench across Mystery Ridge and Brush Mountain Roads will be covered over with a steel plate to allow for passage as necessary. Currently, all three roads are not available for motorized public use, with the exception of Brush Mt, which is open to public motorized use seasonally. Mountain Valley does not anticipate that a closure order will be necessary for these roads.

6.6 Contingency Planning

MVP will maintain constant oversight of the ANST boring operation. Should the conventional bore under the ANST fail as described in the Contingency Plan for the Proposed Crossing of the Appalachian National Scenic Trail (Appendix E), MVP will notify and seek approval from FERC and FS to utilize the alternative bore methods described in Appendix E. No motorized vehicle traffic is permitted between the Appalachian National Scenic Trail bore pits. However, construction and operations personnel may walk between the pits as needed to complete inspections. If leveling is required, the area affected will be returned to the preconstruction contours.

6.7 Safety Requirements

MVP construction contractors are required to develop and submit Site-Specific Emergency Action Plans (SSEAP) prior to the start of construction activities. The SSEAP will identify potential hazards including detailed plans to prevent, mitigate and/or eliminate the hazards as well as emergency response procedures for potential event. The plan will also identify potential hazard scenarios. Construction contractors will be responsible for training all employees, and agency representatives that will be present on-site during construction. SSEAP's will be thoroughly vetted by MVP and shared with the FS and CIC as discussed in the Framework Construction Emergency Preparedness and Response Plan in Appendix Q of the POD.



*Plan of Development
Mountain Valley Pipeline Project*

At all locations where the general public can access the construction perimeter, such as roads and trails, high-visibility warning signs will be installed before and at the point of entry. Warning signs are typically no smaller than two feet by two feet and come in various high-visibility colors. The construction perimeter will also be flagged in high-visibility colors, and if needed, safety fencing. If requested, Mountain Valley will assist the USFS with preparation of materials necessary for public announcements related to the Project on FS-JNF existing information kiosks and the FS-JNF website (Alerts & Warnings). MVP will also place construction notifications related to federal properties in the local papers in Giles, Craig, and Montgomery counties. MVP will also provide the construction notices to the BLM and USACE to post on their public notification sites.

MVP will provide security staffing during construction of the Project. This will include an officer at an offsite construction lay down area to provide security outside of the JNF and a second mobile officer at the construction site. A mobile security supervisor will be in the area and available to monitor and assist as needed. Construction contractors will be required to provide their own security officers to monitor their equipment and assist with construction activities such as safety over watch, off road traffic control, and visitor monitoring.

Safety during operations and maintenance is discussed in Section 9 and Appendix R of the POD.



7.0 RESOURCE VALUES AND ENVIRONMENTAL CONCERNs

This section provides a brief summary of the procedures contained in the Environmental Protection Plans included as appendices to this POD that MVP will use to ensure environmental protection during construction, operation, and maintenance. The Environmental Protection Plans are stand-alone documents that contain complete lists of all environmental protection measures and other specific stipulations and methods for that environmental resource. MVP will ensure their contractors and employees implement these measures.

The Environmental Compliance Management Plan, included as Appendix N to this POD, is the primary guidance document that states how MVP will uphold, document, and manage compliance with the Right-of-Way Grant, the POD, and all federal, state, and local permits. It is a centralized Project environmental compliance reference and is intended to facilitate environmental compliance. It describes the following essential elements:

- Roles and responsibilities of the participants;
- Comprehensive inspection and monitoring program;
- Corrective procedures in the event of non-compliance;
- Standard protocol for variance requests, exceptions, and other deviations;
- Communication plan;
- Reporting process; and
- Comprehensive Project-specific environmental compliance training program.

The Environmental Compliance Management Plan is intended to be revised as needed throughout the construction process.

7.1 Soils and Vegetation

The Project has potential to impact soils and vegetation; as a result, environmental protection measures have been developed to minimize potential impacts on these resources and will be applied, as applicable, to the Project.

The Project Restoration Plan (Appendix H to the POD) focuses on the stabilization and protection of existing vegetation and soils, minimizing disturbance of the environment to the extent practical, and establishing vegetation communities that are consistent and compatible with adjacent land uses. The goal of this plan is to provide a structure for developing and implementing the Project's restoration process on the JNF, which will be designed to restore impacted areas to meet the following objectives:

- Topsoil segregation and stockpiling;
- ROW stabilization and restoration;
- Seedbed preparation and re-seeding;
- Noxious- and invasive-weed control; and
- Road reclamation.



7.2 Exotic and Invasive Species Control

The FS developed a National Strategic Framework for Invasive Species Management in 2013 to guide the FS in responding to the invasive species problem in the United States. This guidance document identifies the most significant strategic actions that should be undertaken to reduce the threat of invasive species (FS 2013). The FS's national strategy encompasses four program elements:

- Prevention;
- Detection;
- Control and management; and
- Restoration and rehabilitation.

The Exotic and Invasive Species Control Plan (Appendix S to this POD) is based on this guidance document, as well as the procedures and measures identified in FERC's Plan, and was prepared with the support of the Wildlife Habitat Council. The Exotic and Invasive Species Control Plan presents methods to control the potential occurrence/infestation of noxious and invasive weeds, including herbicides, during and following construction of the Project. The purpose of the plan is to ensure noxious weeds are identified and controlled during the construction of Project facilities and all federal, state, and county requirements are satisfied. Pursuant to the FS's request, MVP has also developed an Herbicide Usage Plan (Appendix T to this POD).

7.3 Water Quality

7.3.1 Stormwater Pollution Prevention

The Stormwater Pollution Prevention Plan for Virginia (Appendix U to this POD) will serve as a guidance document to be used during development of the site-specific erosion and sedimentation control plans and stormwater management plan in Virginia in an effort to reduce stormwater discharge associated with construction of the Project. The Stormwater Pollution Prevention Plan for West Virginia is included within the Erosion and Sedimentation Control Plan (Appendix C-1 to this POD).

7.3.2 Spill Prevention, Containment, and Countermeasures

The SPCC Plan and Unanticipated Discovery of Contamination Plan (Appendix D to this POD) describes preventive measures, such as personnel training, equipment inspection, and refueling procedures, to reduce the likelihood of spills. It also describes mitigation measures, such as containment and cleanup, to minimize potential impacts if a spill occurs.

7.3.3 Impact Avoidance and Minimization

To minimize impacts to water resources, Mountain Valley reduced the temporary construction ROW at waterbody crossings from 125 feet to 75 feet. Clearing activities within riparian buffer areas is also restricted to the 75-foot temporary construction ROW. Buffer areas for each waterbody extend approximately 50 feet, where possible, from where the pipeline trench enters the waterbody area. The resource crossing and associated buffer areas will be treated as separate construction entities, except during



clearing activities, and efforts will be made to cross these areas during low-flow conditions to the extent practicable. All Project waterbody crossings within the JNF will be conducted using the conventional bore method so that no in-stream work or direct impact on the waterbodies will be required. Temporary equipment crossings will be completed via timber mat or equipment bridges to avoid impacts if no existing culvert is present. The spoils from the bore pits required for the crossings will be placed outside of the riparian corridor with the distance from the waterbody dependent on the flow type and slope - spoil is required to be stored at least 100 feet from a perennial stream, at least 50 feet from an intermittent stream, and at least 25 feet from an ephemeral channel.

Once grubbing and grading starts at a waterbody crossing, it will be actively conducted for consecutive days until the crossing is completed and the work area is restored. In general, the same measures utilized for upland construction also apply to waterbody crossings. Sediment barriers will be installed immediately after initial disturbance of the waterbody or adjacent upland area in accordance with the Annual Standards and Specifications (Appendix C-2 to this POD). Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Sediment barriers will be installed across the entire construction ROW at all waterbody crossings. Where waterbodies are adjacent to the construction ROW, sediment barriers will be installed along the edge of the construction ROW as necessary to contain spoil and sediment within the ROW. Trench plugs in combination with slope breakers will be used on slopes above all waterbody crossings to divert any accumulated trench water off the ROW and prevent from flowing directly into the waterbody. Trench plugs will be of sufficient size to limit water flow along the trench. Permanent slope breakers will be installed in all areas of the Project including 25 feet from all waterbody boundaries to minimize potential for erosion to occur within the riparian buffer areas. Should any erosion and sediment control measures be found to be ineffective, Mountain Valley will revise the BMP installation or implement additional controls to correct the deficiency.

During project activities on National Forest lands, Mountain Valley will conduct project construction activities in a manner that minimizes duration of disturbance in all areas including steep slopes.

7.4 Plant and Wildlife Conservation

The Plant and Wildlife Conservation Measures Plan (Appendix V to this POD) presents the measures to be implemented by the MVP for avoidance and minimization of impacts to plant and wildlife species as related to construction activities for the Project. This plan outlines specific conservation measures to be implemented in the event that state or federally listed species, FS sensitive species, or their habitats are identified within or adjacent to the Project ROW.

The plan includes information on (1) regulatory requirements and agency concerns pertaining to biological resources, (2) avoidance and minimization conducted during siting and routing of the Project to avoid impacts to biological resources, and (3) specific



environmental protection measures to be implemented if state- or federally listed species, or FS sensitive species or their habitats are identified within, or adjacent to, the Project ROW. In addition, the plan addresses general wildlife including big game, raptors, and migratory birds. Table 7-1 identifies time of year restrictions related to special status species.

Table 7-1 Time of Year Restrictions on Jefferson National Forest lands crossed by the Mountain Valley Pipeline.

Species	Time of Year Restriction a/
Migratory Birds	April 1 – July 31
Indiana bat and Northern long-eared bat c/	June 1 – July 31
Northern long-eared bat (within 0.25-mile radius around entrance to Tawney's Cave)	April 1 – November 14
UNT to Craig Creek, S-PP20 b/	May 15 – July 31
UNT to Craig Creek, S-PP21 b/	May 15 – July 31
UNT to Craig Creek, S-PP22 b/	May 15 – July 31
UNT to Craig Creek, S-HH18 b/	May 15 – July 31

Notes:

a/ Time of year restrictions as specified by the U.S. Fish and Wildlife Service and the Virginia Department of Wildlife Resources

b/ Time of year restriction due to James spiny mussel for in-stream activity only (these streams will be crossed using trenchless methods; therefore, no time-of-year restrictions should apply)

c/ Since all trees on JNF property have been cut, no time of year restriction should apply

MVP will monitor and record the success of revegetation on FS lands for five growing seasons or longer, until the FS has determined that revegetation has been successful and scenic integrity objectives have been met. MVP will submit a status report to the FS following each inspection. Should a stream bank's vegetation not reestablish following five growing seasons, MVP will work with FS personnel to develop a plan for re-establishment, including monitoring requirements.

7.5 Health and Safety

7.5.1 Blasting

The Blasting Plan (Appendix J to this POD) outlines the procedures and safety measures that the contractor will adhere to while implementing blasting activities during the construction of the Project. The need for blasting and the methods utilized are largely determined by type of rock encountered along the route. Blasting is likely to be needed in areas with hard and intact sedimentary bedrock (sandstones, limestones, and shales). Soft bedrock, such as weathered sandstones, limestones, and shales, may possibly be removed by ripping or mechanical means. Table 6-4 lists areas within the JNF where blasting may be necessary.

The Blasting Plan discusses the regulatory requirements, plans for pre- and post-blasting inspections, and monitoring and mitigation measures.

7.5.2 Fugitive Dust Control

The Fugitive Dust Control Plan (Appendix W to this POD) provides measures to ensure protection of the air quality that will be affected by the Project. This plan will be



implemented during the construction phase of the Project. These measures are intended to minimize dust and emissions from construction-related activities.

7.5.3 Fire Prevention and Suppression

The Fire Prevention and Suppression Plan (Appendix X to this POD) includes measures to be taken by the MVP and its contractors to ensure that fire prevention and suppression measures are carried out in accordance with federal, state, and local regulations. The plan addresses the specific requirements of the FS and provides BMPs for fire management on privately owned lands.

On the JNF, the use of dozers for fire line construction over the pipeline would present no hazards but would require a post-wildfire inspection of the remaining depth of cover above the pipeline. Construction of fire lines with explosives within 200 feet of the pipeline would be prohibited if 24-hours' notice cannot be given and/or if other precautionary measures cannot be met.

Prescribed fires in the JNF would not affect pipeline integrity. When a prescribed fire is being planned by the FS, communication with MVP should occur so the plastic surface line markers can be removed during the event and replaced when completed. In the event a fire, planned or unplanned, was to occur on the surface in the vicinity of the pipeline, the presence of the pipeline would not increase fire hazards. Fires on the surface are not a direct threat to underground natural gas pipelines because of the insulating effects of soil cover over the pipeline.

7.5.4 Hazardous Materials Management

The Hazardous Materials Management Plan (Appendix Y to this POD) includes measures to reduce the risks associated with the use, storage, transportation, production, and disposal of hazardous materials (including hazardous substances and wastes). This plan identifies Project-specific mitigation measures and other specific stipulations and methods to address spill prevention, response, and cleanup procedures for the Project.

7.5.5 Construction Emergency Preparedness and Response

The Framework for Construction Emergency Preparedness and Response Plan (Appendix Q to this POD) provides an overview of methods to be implemented if the need for emergency management is imminent. This framework describes the existing support structure, chain of command, and emergency communications protocols.

7.5.6 Operations, Maintenance, and Emergency Response

The Operations, Maintenance, and Emergency Response Plan (Appendix R to this POD) includes measures to be employed while conducting routine, corrective, and emergency operations and maintenance activities. Measures identified are in compliance with applicable state and federal laws and policies allowing for the MVP to access the pipeline ROW in a timely, cost effective, and safe manner.

7.5.7 Flagging, Fencing, and Signage

The Flagging, Fencing, and Signage Plan (Appendix Z to this POD) describes the methods used in the field to delineate the Project limits of disturbance and protect



sensitive environmental and cultural resources during Project construction. These methods are intended to ensure MVP personnel, the construction contractor(s), the BLM, FS, USACE, CIC, and other monitors and visitors to the Project construction sites stay on approved access routes and within approved work areas. The measures described in this plan are an integral part of the environmental compliance program for avoiding and minimizing impacts to sensitive resources. The objective of this plan is to provide information on the field markings (i.e., flagging, fencing, and signage) that will be used to identify approved Project travel and work areas, as well as sensitive resource areas where construction or travel is to be excluded.

7.6 Cultural and Historic Resources

The Plan for Unanticipated Historic Properties and Human Remains (Appendix O to this POD) identifies the protocols MVP will implement if historic properties or human remains (an unanticipated discovery) are discovered during construction activities. Also see the Flagging, Fencing, and Signage Plan (Appendix Z to this POD), which describes the methods used in the field to delineate limits of disturbance and protect sensitive cultural resources during Project construction.

7.7 Unanticipated Discovery of Paleontological Resources

The Plan for Unanticipated Discovery of Paleontological Resources (Appendix P to this POD) identifies the protocols MVP will implement if paleontological resources (an unanticipated discovery) are discovered during construction activities. Also see the Flagging, Fencing, and Signage Plan (Appendix Z to this POD), which describes the methods used in the field to delineate limits of disturbance and protect sensitive cultural resources during Project construction.

7.8 Off-Highway Vehicle Control and Access

The Off-Highway Vehicle Management Plan (Appendix AA to this POD) discusses methods to limit off-highway vehicle (OHV) use within the ROW in order to avert user conflicts in adjacent areas, as well as to avoid problems with revegetation efforts and prevent potential erosion within the ROW. To minimize OHV access within the ROW, MVP will install barriers at appropriate locations in coordination with the JNF. The proposed OHV barriers will be designed and constructed in a manner that attempts to prevent unauthorized motor vehicle/OHV use of and along the ROW, but will still allow the passage of wheelchairs or any device that meets the legal definition of a wheelchair in areas where a gate, barrier, or berm is installed on a road to close it to motorized traffic, but foot travel is encouraged beyond the gate or barrier.

7.9 Scenery Mitigation

To ensure compliance with Scenic Integrity Objectives (SIOs) in the Jefferson National Forest, MVP has/will implement the following mitigation measures and BMPs, which MVP



developed in consultation with FS, to lower potential visual impacts from the Project identified during the analysis.

- ROW clearing in the following areas was conducted to undulate the construction ROW edges to achieve the effect shown in Figure 7-1 to ensure that vegetative openings appear more natural and conform to the natural form, line, color, and texture of the existing landscape. These areas have a High or Moderate SIO and were identified in the FERC final Environmental Impact Statement (FERC 2017) as requiring mitigation in order to meet those SIOs.
 - Top of Peters Mountain – milepost 196.25 to the bore pit on north side of mountain.
 - Top of Peters Mountain – from the bore pit on the south side of the mountain to milepost 197.8 on Mystery Ridge.
 - Crest of Sinking Creek Mountain – milepost 218.52 to reduce visibility of the “notch” in the trees at the top of the mountain.
 - The north side of Brush Mountain – mileposts 219.7 to 220.75.
- Temporary work spaces within forested areas would include some level of shrub plantings or shrub seed mixes to soften the hard edge formed between the existing/undisturbed forest and the maintained ROW. MVP intends to include woody seed mixes within temporary areas where forest regeneration is desired.
- MVP has sited the alignment to conform to the natural lines in the landscape and follow existing ROWs, where feasible.
- Road or trail crossings will be done at a right angle, where feasible, to ensure the shortest duration of view for the crossing (FS 1975).
- Revegetate the construction and permanent operational rights-of-way as shown in the concept diagram provided in Figure 7-2. This entails maintaining an herbaceous strip 10-foot wide centered over the pipeline and performing trimming or selective cutting of trees over 15-foot-tall within a 30-foot-wide strip centered over pipeline. Outside the 10-foot-wide strip, the remainder of the construction and permanent ROW would be revegetated through the use of acceptable seed mixes, pollinator plants, shrubs and trees in accordance with FERC's Procedures. Particularly along the edge of this herbaceous linear opening, a variety of sizes and species of vegetation would be planted in a manner that breaks up the straight, parallel edges of the corridor and reduces the hard shadow line that can draw the viewer's attention.
- MVP had a landscape architect on-site during ROW clearing to monitor for activities pertaining to scenery including but not limited to undulating the construction ROW edges in areas identified above. Following construction, the landscape architect will also participate in the monitoring of ROW revegetation from a variety of viewpoints to assure scenic integrity objectives are met within five years.

The ANST will be crossed by the Project by using a bore method to ensure there will be no disruptions to the vegetation along the ANST.



Plan of Development
Mountain Valley Pipeline Project

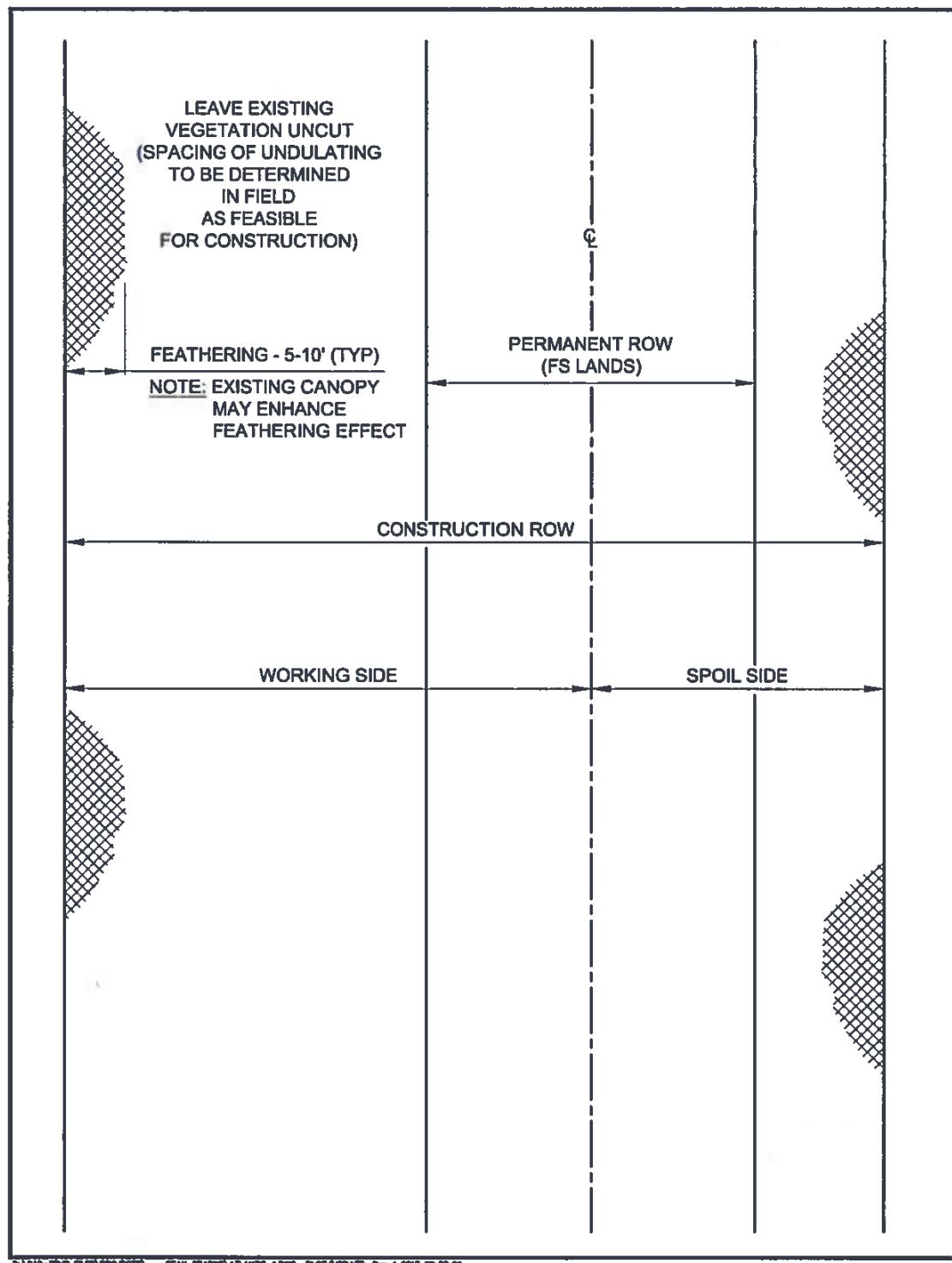


Figure 7-1. Typical ROW Clearing Pattern for Vegetation Feathering Technique

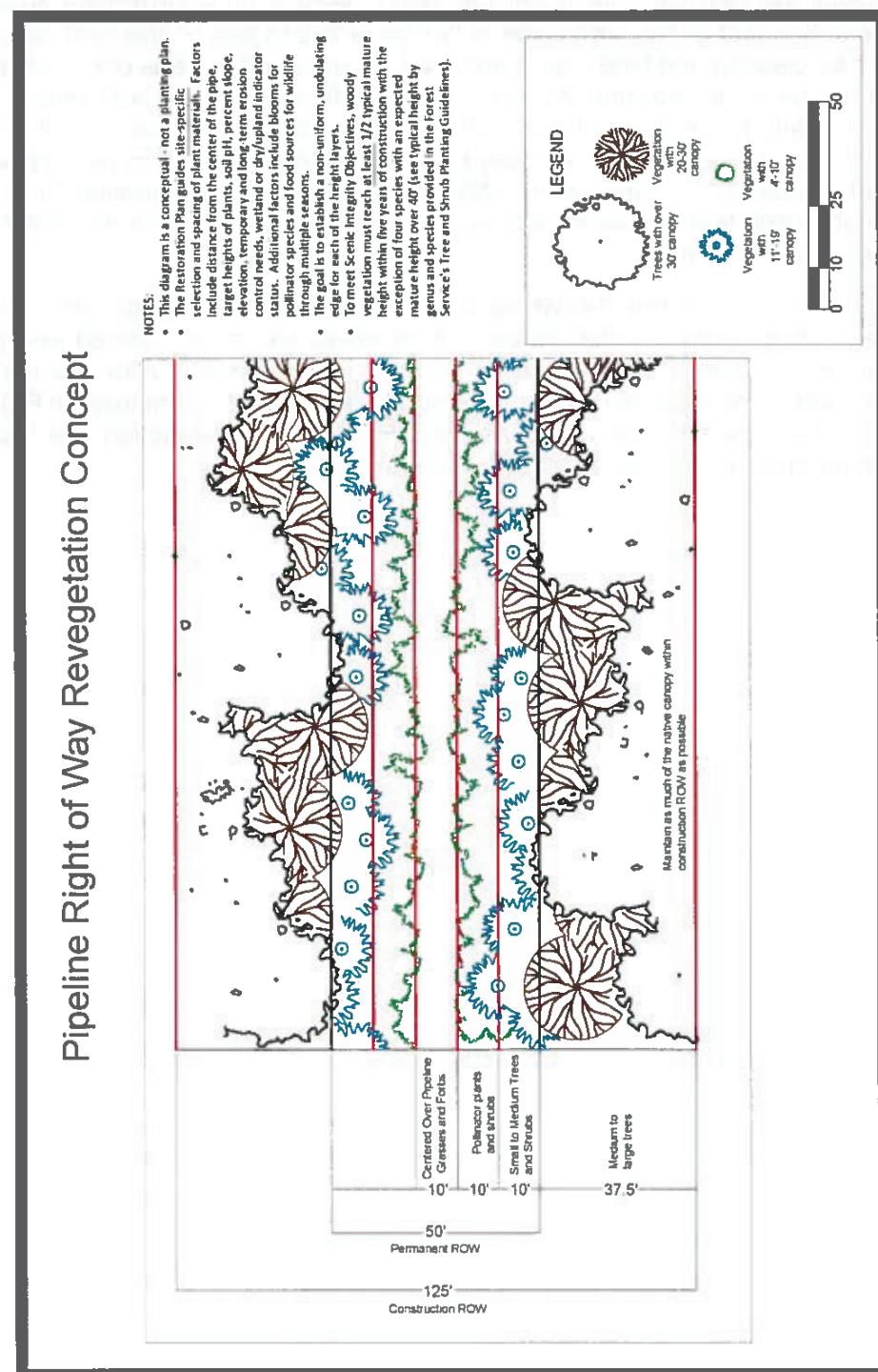


Figure 7-2. Concept for Revegetation of the Right-of-Way



*Plan of Development
Mountain Valley Pipeline Project*

MVP will install the pipe via bore under the ANST, leaving an approximate area of no disturbance of 307 feet on the south side of the trail and 273 feet on the north side of the trail where tree clearing and land disturbance will not occur. The areas of no disturbance of 307 feet on the south side and 273 feet on the north side of the ANST refer to those between the safety fence that will be installed in front of the bore pits and the ANST. These barriers will be set up approximately ten feet in front of each bore pit to provide for the safety of workers and visitors to the ANST during construction activities. Thus, there is approximately 600 feet between the bore pits, eliminating visibility of the ROW to trail users at the crossing location.

Short-term impacts will include the visible evidence of temporary construction activities, such as vegetation clearing; color contrast of disturbed soil in the cleared and graded construction ROW; and the presence of vehicles and workers. With the mitigation measures of feathering (scalloping or undulating) the edges of the construction ROW and revegetation of the construction and permanent ROW after construction, the Project is expected to meet all of the Scenic Integrity Objectives.



8.0 STABILIZATION AND REHABILITATION

8.1 Restoration (Soil Replacement and Stabilization)

As requested by the FS, topsoil within the ROW and construction disturbance footprint on the JNF will be segregated from subsoils. This segregated topsoil will be replaced over the subsoils after the trench is backfilled and prior to restoration and revegetation effort. Soils that have been compacted by construction equipment traffic will be decompacted via disking. No additional soil materials will be brought onto the JNF from outside the NFS lands.

Soils will be initially stabilized during construction through the use of temporary erosion control devices. Following construction, the surface of the ROW disturbed by construction will be graded to match original contours to the greatest extent practicable and to be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage will be required to prevent erosion, scour, and possible exposure of the pipeline. Soils will then be decompacted (as described above), and permanent erosion control measures will be installed at this time. Temporary construction erosion control measures may also be left in place following construction until sufficient vegetative cover is re-established to prevent significant erosion and sedimentation (see Appendix C of the POD for more details regarding erosion control devices).

Beginning in late 2019, MVP has implemented temporary soil stabilization efforts for the segments of the Project on Sinking Creek and Brush Mountains as a result of the FERC Stop Work Order. Temporary stabilization included application of seed, mulch, binder, and fertilizer to establish a temporary vegetative cover to minimize surface erosion and sedimentation in upland areas and adjacent to live and perennial streams. Specifications were developed in coordination with the FS and documented as Amendment #2b to the September 21, 2018 Stabilization Plan, dated August 23, 2019.

Following construction, successful restoration and revegetation of disturbed areas is a critical component of soil stabilization. Restoration and soil stabilization will be considered successful if construction debris is removed (unless requested otherwise by the FS), revegetation is successful, proper drainage has been restored, and the appropriate federal and state agencies agree that the restoration efforts were successful (see Appendix H of the POD for more details regarding restoration and revegetation). Following construction, MVP will monitor and record the success of revegetation on FS-managed lands for up to five growing seasons or until the area is 80 percent revegetated. Inspection frequency will be at least annually. MVP will submit a status report to the FS following each inspection. Should the vegetation in an area not reestablish following five growing seasons, MVP will work with FS personnel to develop a plan for re-establishment, including monitoring requirements.

All soil stabilization and restoration activities located on NFS lands shall be completed to accepted federal, state, and local BMPs and to the satisfaction of the FS Authorizing Officer in charge. In addition, as-built drawings of the segments crossing NFS lands will be provided to the FS, and all National Forest boundary monuments disturbed or



damaged within the Project area will be re-established upon completion of installing the pipe and establishing the ROW corridor.

8.2 Disposal of Vegetation Removed During Construction

All merchantable timber that was encountered on Sinking Creek and Brush Mountains was hauled away in conjunction with FS guidelines. Stumps were cut as close to the ground as feasible and left in place, except for in areas directly over the trench line. All non-merchantable brush and slash will remain on the ROW until pipeline construction activities begin, utilized in downslope areas of the ROW, and/or removed from the area in accordance with FS requirements.

Non-merchantable brush and slash will be retained on site to provide a level of erosion control until actual pipeline construction begins, at which time it will be windrowed to the edge of the ROW. Windrowing of non-merchantable timber, brush and slash along the ROW will result in habitat for many types of wildlife including rabbits and other small mammals, ruffed grouse, song birds and reptiles and provide food for insects. The windrows can also serve as escape cover from predators as well as locations for nesting and shelter from inclement weather. The windrows should be restricted to 8 feet tall, 20 feet wide, and 100 feet long with a 50-foot break between piles in order to provide fire breaks and wildlife crossings. Non-merchantable brush and slash can be utilized in downslope areas of the ROW and access roads to aide in soil stabilization and erosion control. Layering the brush and slash at the toe of a low-side slope along an access road provides soil stabilization, and erosion and sediment control. Layering of brush and slash can promote physical protection to the downslope areas of the ROW. Additionally, the layering can provide long-term support for revegetation in downslope areas of the ROW.

8.3 Seeding Specifications

MVP consulted with the FS regarding appropriate seed mixtures for use within the JNF. The FS indicated that the initial goal of seeding on the JNF is to establish vegetative cover to minimize surface erosion and sedimentation, while the secondary goal is to establish an assortment of native species congruent with local ecological communities and beneficial for wildlife and pollinators. Native plants that provide structural diversity and wildlife/pollinator benefits often do not germinate or grow fast enough to provide initial erosion control; therefore, these goals will be accomplished through the use of seed mixes that include both fast growing, annual/short-lived perennial non-native grass species provided by the FS on November 21, 2016, as well as some perennial native species. Additional guidance on seeding specifications where short-term stabilization is required was provided by the FS in August 2019. Specifics regarding the seed mixes that would be used as well as the preparation of seed beds and seeding methods that would be used are described in the Restoration Plan (Appendix H to the POD) and the Plant and Wildlife Conservation Plan (Appendix V of the POD).



8.4 Fertilizer

Dry fertilizer and lime will be incorporated into the top two to five inches of soil by disk ing or other means. The following are guidelines for fertilizer and lime application rates recommended by the FS:

- Fertilizer:
 - 600 – 800 lbs/acre of 10-20-10 (Nitrogen [N], Phosphorous [P], Potassium [K]) fertilizer);
 - 400 lbs/acre of 15-30-15 (N-P-K) fertilizer; or
 - 800-1,000 lbs/acre of 10-10-10 (N-P-K)
- Lime:
 - 1,500-4,000 lbs/acre (pelletized or dust); or
 - 4,000 lbs/acre of Hydro Lime (2.5 gal container is equivalent to 1000 lbs limestone; 5-10 containers/acre).

Additional guidance on soil amendments where short-term stabilization is required was provided by the FS in August 2019. Soil chemistry tests will be conducted during construction and the fertilizer and liming rates described above will be adjusted accordingly based on the results of site-specific soil tests. Soil chemistry data will be submitted to the FS following testing and any modifications to the fertilizer or lime application rates described above will be provided to the FS for approval prior to use (see the Restoration Plan; Appendix H to the POD).

8.5 Limiting Access to the ROW and Law Enforcement

Appendix AA to the POD discusses the measures MVP proposes to control access to the ROW during operation. FS Law Enforcement concerns involve poaching, illegal ATV-OHV usage, violations of the Archaeological Resources Protection Act, dumping, and other illegal activities that may increase by utilizing the pipeline corridor. A plan for monitoring involving both FS Law Enforcement and Heritage Program personnel will be provided to MVP. Once agreed upon, the plan for monitoring will be included in the communication plan. The Heritage Program will require an incremental or phased monitoring plan of the archaeological resources located adjacent to the pipeline corridor and will be implemented by FS archaeologists to meet SHPO and Tribal Historic Preservation Office programmatic agreement demands. FS Law Enforcement concerns covering a constant monitoring of the areas will need to be implemented to ensure public safety and protection of forest resources. Monitoring of forest and cultural resources will be conducted by the FS and funded through cost recovery.

8.6 Access Road Reclamation

No new roads will be built on the JNF for this Project. Two existing FS roads, Pocahontas Road (FR #972) and Mystery Ridge Road (FR #11080), were used to support ROW clearing and initial construction through 2018 but will not be used to support the remaining future construction. Because these roads supported ROW clearing and some initial construction, MVP will continue to work with the USFS on a maintenance plan. MVP does



*Plan of Development
Mountain Valley Pipeline Project*

not intend to utilize or perform any work on the northwestern portion of Mystery Ridge Road (FR #11080) west of pipeline milepost 196.9 where the pipeline ROW first intersects with this road from the west. The section of Mystery Ridge Road that parallels the construction ROW will be returned to original or better condition upon completion of the pipeline construction as discussed in section 6.5. Temporary erosion control measures will be removed upon final stabilization and approval from applicable federal and state agencies and installation of permanent erosion control measures. MVP will not use Pocahontas (FR #972) or Brush Mountain (FR #188) Roads for construction or operation traffic. Signage will be posted during construction letting construction traffic know that Pocahontas and Brush Mountain Roads cannot be utilized.



9.0 OPERATION AND MAINTENANCE

Following construction of the Project facilities, certain areas along the pipeline alignment will comprise permanent ROW or facility sites. For pipeline facilities within FS-managed lands, MVP will maintain a typical permanent ROW easement of 50 feet in width. In some locations, it will be necessary to retain access roads used for construction to support ongoing pipeline operations as discussed in Section 9.1.

MVP will operate and maintain the Project in compliance with PHMSA regulations provided at 49 CFR Part 192, FERC regulations at 18 CFR § 380.15, and maintenance provisions of FERC's Plan and Procedures (FERC 2013a, 2013b). MVP will not use herbicides and pesticides for routine maintenance of the ROW or any of its Project facilities. However, in consultation with the FS, MVP may use herbicides or pesticides as needed for control of noxious weeds and invasive species. Appendix X contains MVP's Herbicide Use Plan, which identifies how herbicide used to control noxious weed and invasive species will be implemented on the JNF.

Pipeline

Operational activity on the pipeline will be limited primarily to maintenance of the ROW and inspection, repair, and cleaning of the pipeline. All maintenance activities will be confined to the ROW. Periodic aerial and ground inspections by pipeline personnel will identify soil erosion that may expose the pipe; dead vegetation that may indicate a leak in the line; conditions of the vegetation cover and erosion control measures that require corrective action; encroachment on the ROW, such as buildings and other substantial structures; and other conditions that could present a safety hazard or require preventive maintenance or repairs.

A schedule for the maximum intervals between inspections/patrols by class area is provided in Table 9-1. The pipeline's cathodic protection system will also be monitored and inspected in accordance with 49 CFR Part 192 requirements to ensure proper and adequate corrosion protection. The pipeline will be designed for internal inspection technology. Appropriate responses to conditions observed during internal inspections will be taken as necessary. In addition, class change studies will also occur to identify areas of development.

Vegetation on the permanent ROW will be maintained by mowing, cutting, and trimming. The permanent ROW will be allowed to revegetate; however, large brush and trees will be periodically removed in accordance with the FERC's Plan and Procedures. In uplands, trees or deep-rooted shrubs could damage the pipeline's protective coating, obscure periodic surveillance, or interfere with potential repairs and would not be allowed to grow within the permanent ROW. Along the length of the pipeline, including wetlands, MVP will maintain a 10-foot-wide strip over the pipeline in a herbaceous state. The construction and permanent operational rights-of-way will be revegetated as shown in the concept diagram provided in Figure 7-2. This entails maintaining an herbaceous strip 10-foot wide centered over the pipeline and performing trimming or selective cutting of trees over 15-foot-tall within a 30-foot-wide strip centered over pipeline. Outside the 10-foot-wide strip, the remainder of the construction and permanent ROW would be revegetated through the use of acceptable seed mixes, pollinator plants, shrubs, and trees in accordance with



FERC's Procedures. Particularly along the edge of this herbaceous linear opening, a variety of sizes and species of vegetation would be planted in a manner that breaks up the straight, parallel edges of the corridor and reduces the hard shadow line that can draw the viewer's attention.

Table 9-1. Inspection Schedule for Major Components of the Project

Pipe Class a/	Inspection/Patrol Interval b/
Highway and Railroad Crossings	
Class 1 and 2	7.5 months but at least twice each calendar year
Class 3	4.5 months but at least four times each calendar year
All Other Locations	
Class 1 and 2	15 months but at least once each calendar year
Class 3	7.5 months but at least twice each calendar year

a/ MVP will be installing Class 2 pipe on NFS lands

b/ Intervals comply with 49 CFR § 192.705. Regulations include intervals for Class 4 pipe; however, there will be no Class 4 pipe locations on the MVP Project, and it was therefore not included.

During operation of the Project, the pipeline ROW would not restrict potential future timber operations and would not isolate currently manageable timber tracts. MVP would, however, require that operation of heavy equipment within the ROW, such as log skidders, be coordinated with MVP to ensure the integrity of the pipeline is maintained. Mountain Valley also indicated that with plans to install Class 2 pipe buried at least 36 inches below the ground surface within the JNF, there would be no restrictions on the use of heavy firefighting equipment by the FS.

The pipeline facilities will be clearly marked at line-of-sight intervals and at crossings of roads, railroads, waterbodies, FS trails, and other key points, in accordance with PHMSA regulations. The markers will clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative can be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. MVP will participate in "One Call" systems in West Virginia and Virginia.

Aboveground Facilities

There are no compressor stations, metering stations, pig launcher and receiver sites, or mainline valve sites on the JNF or at the Weston and Gauley Turnpike crossing.

9.1 Access Needed for Operation and Maintenance

MVP will require access to USFS lands for maintenance activities during operation. MVP intends to utilize the established pipeline corridor for access.

MVP will comply with operations and maintenance measures in Appendix V of this POD (Plant and Wildlife Conservation Measures Plan) that address migratory birds and other species.

9.2 Hydrostatic Testing During Operation

Hydrostatic testing will be performed along the portion of the pipe on the FS and USACE managed lands; however, no water will be withdrawn or released on FS or USACE



managed lands. Should hydrostatic testing be necessary during operations of the Pipeline, no water will be withdrawn or released on FS or USACE managed lands.

9.3 Removal or Addition of Infrastructure during Pipeline Maintenance

Infrastructure on FS or USACE-managed lands will be limited to buried pipeline; no aboveground facilities will be located on the FS or USACE-managed lands. At this time, it is not expected that any replacement of pipe sections will be required on FS or USACE managed lands during operations. However, if any repairs are necessary, MVP would consult with the FS and USACE prior to the pipe repair.

9.4 Safety

MVP and/or its designated contractor perform a number of activities to keep pipelines operational and in good repair. Most of these activities, such as routine patrols, inspections, and scheduled maintenance, are planned in advance. However, there could be an occasional need for emergency response in cases where public safety and property are threatened, to prevent imminent damage to the pipeline and ancillary facilities.

Routine, corrective, and emergency response activities will be conducted in accordance with a Project-specific Operations, Maintenance, and Emergency Response Plan (Appendix R to the POD).

Mountain Valley will continue to coordinate with the FS to establish long-term monitoring of sensitive areas within, adjacent to, or in the vicinity of the pipeline ROW.

9.5 Industrial Wastes and Toxic Substances Generation or Storage on ROW

It is not anticipated that hazardous waste will be generated or stored during construction of the Project. However, if for any reason hazardous waste is created or uncovered during construction or operation of the Project, the SPCC Plan and the Unanticipated Discovery of Contamination Plan would identify methods for handling the waste. All waste would be disposed of per state and federal requirements (see Appendix Y to the POD).

9.6 Inspection and Maintenance Schedules

An inspection and maintenance schedule is provided as Table 9-1. Additional information is included in the Operations, Maintenance, and Emergency Response Plan (Appendix R to the POD).

9.7 Work Schedules

Work schedules during operation and maintenance will be determined based on the necessary activity. An inspection and maintenance schedule is provided as Table 9-1.

9.8 Fire Control

The construction and operations contractors working on the Project will be required to implement the provisions of the Fire Plan (Appendix X to the POD). Additionally, each contractor will be required to prepare and implement an individual fire control plan, which



will identify responsibilities and describe actions to be implemented by the contractor in the event of an inadvertent fire. Copies of each fire control plan will be appended to this Fire Plan and provided to the FS for its review. The key persons responsible for fire prevention and suppression during construction of the Project are Chief Inspectors, Spread Superintendents, Field Safety Officers, Facility Superintendents, Environmental Inspectors, and Authorized Officers. Contact information for these persons is included in the Fire Plan and will be updated as needed prior to the start of construction. At a minimum, each construction spread for the pipeline and each aboveground facility site will have one Field Safety Officer trained in accordance with National Fire Protection Standards 1521, Chapter 4, Responsibilities for a Health and Safety Officer.

9.9 Contingency Planning

Contingency Planning has been developed to the greatest extent possible to account for potential landslides, karst features, the ANST conventional bore failures, unanticipated discoveries, exotic and invasive species, spills, and fires. Should a need for additional contingency plans become necessary prior to or during construction, MVP will work with the FS to complete the required plans.



10.0 TERMINATION AND RESTORATION

10.1 Removal of Structures

The expected useful lifespan of the Project would be about 50 years. While there is no termination date for a FERC Certificate, at the end of the 50-year period, MVP may need to repair, replace, or abandon facilities. Any of those actions would require permission from FERC in response to new applications. MVP would also coordinate with BLM and FS. Abandonment activities would require an application to the FERC under Section 7(b) of the Natural Gas Act. Facilities could either be abandoned in place or by removal. Typically, the agencies would conduct a separate environmental review under the National Environmental Policy Act for a new application for abandonment. The public would have the opportunity to comment on these applications.

10.2 Obliteration of Roads

No new access roads will be built to access the pipeline ROW on the JNF during operations. Hence, MVP does not plan to obliterate any roads in the event of abandonment of the pipeline.

10.3 Stabilization and Revegetation of Disturbed Areas

The stabilization and revegetation of disturbed areas associated with abandonment would comply with the FERC's Plan and Procedures, all requirements outlined in the BLM Right-of-Way Grant, and MVP's Restoration Plan (see Appendix H to the POD) or according to the equivalent or more advanced standards the agencies have adopted by the time abandonment occurs.



11.0 REFERENCES

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**United States Department of the Interior
BUREAU OF LAND MANAGEMENT**

**EXHIBIT F
RIGHT-OF-WAY
VAES-058143-04**

MOUNTAIN VALLEY PIPELINE

